Department of Economics and Statistics
Faculty of Arts, University of Peradeniya
Sri Lanka

PERADENIYA INTERNATIONAL ECONOMICS RESEARCH SYMPOSIUM 2018

PIERS

PROCEEDINGS

Volume VI

8TH AND 9TH NOVEMBER 2018

CONFERENCE HALL, POSTGRADUATE INSTITUTE OF HUMANITIES AND SOCIAL SCIENCES(PGIHS)
UNIVERSITY OF PERADENIYA

Jointly Organized with
Faculty of Economics, South Asian University (SAU), India
Collaborative Partner
Faculty of Economic Sciences and Business Administration,
Transilvania University of Brasov,Romania

PIERS -2018

PROCEEDINGS

Volume VI

6TH PERADENIYA INTERNATIONAL ECONOMICS RESEARCH SYMPOSIUM (PIERS) – 2018

Jointly organized by

Department of Economics and Statistics, Faculty of Arts
University of Peradeniya, Sri Lanka

and

Faculty of Economics, South Asian University, India

Supportive Partner

Faculty of Economic Sciences and Business Administration,
Transilvania University of Brasov, Romania

on

8th & 9th November 2018

at

Postgraduate Institute of Humanities and Social Sciences (PGIHS)
University of Peradeniya
Sri Lanka

DEPARTMENT OF ECONOMICS AND STATISTICS
FACULTY OF ARTS, UNIVERSITY OF PERADENIYA
SRI LANKA

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6TH PERADENIYA INTERNATIONAL ECONOMICS RESEARCH SYMPOSIUM

PIERS - 2018

PROCEEDINGS

Volume VI

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MESSAGE FROM THE VICE CHANCELLOR
University of Peradeniya

It gives me great pleasure to send this message on the occasion of the **6th Peradeniya International Economic Research Symposium** (PIERS) – 2018 organized by the Department of Economics and Statistics, Faculty of Arts, University of Peradeniya.

Identifying the current trends and new developments in the field of economics both at national and international level would definitely be vital for national policy-making, which will eventually decide the direction towards which the country heads. My sincere wish is that being a well reputed research and higher educational institute in Sri Lanka with a legacy of renowned experts in various fields of study, the "University of Peradeniya" should be in the forefront and take the leadership, not only in the field of economics but also in all other disciplines with reference to the future planning and development of our country.

I have no doubt that this symposium will create a valuable platform for economists and all other relevant specialists and researchers to discuss their findings, share the new knowledge thus gained, while exchanging their views among the professional colleagues.

As the Vice Chancellor of the University, I take this opportunity to wish the 6th Peradeniya International Economic Research Symposium a success.

Professor Upul B. Dissanayake
Vice-Chancellor
University of Peradeniya
Sri Lanka

MESSAGE FROM THE VICE PRESIDENT AND DEAN

Faculty of Economics, South Asian University

It gives me great pleasure to co-host the Peradeniya International Economics Research Symposium, 2018 with the Department of Economics and Statistics, University of Peradeniya. South Asian University is jointly established by SAARC nations to cater to the needs of students from entire South Asia and has MOUs with many universities in SAARC countries. University of Peradeniya is one of them. I am really happy that this collaborative effort has borne fruit and we have become partners in promoting research in social sciences in South Asia.

The South Asian region presents a study in contrasts. Despite growing at impressive rates over last decade and a half, the region is home to the largest concentration of the world's poor with abysmal levels of access to basic economic and social infrastructure. Poverty has remained the primary focus in all our discussions regarding South Asia. I hope that some of the presentations in the conference and the theme for the panel discussion will capture this aspect and throw some light on the intensity as well as pervasiveness of the problem. If some steps can be suggested to reduce this malaise, that will be really beneficial. I sincerely hope that these two days of engagement will throw new light on various aspects of economic problems facing Sri Lanka and also South Asia.

I wish PIERS 2018 a grand success.

Professor Santosh C. Panda
Vice President and Dean - Faculty of Economics
South Asian University
India

MESSAGE FROM THE DEAN
Faculty of Arts, University of Peradeniya

I am extremely pleased to express this congratulatory message on the PIERS-2018 organized by the Department of Economics and Statistics, University of Peradeniya. The PIERS has been an important annual event in the Faculty of Arts which provides a forum for national and foreign scholars to share their research outcomes on a wide array of fields in economics with a focus on contemporary issues.

It was observed that this year's conference draws a large number of foreign scholars as the organizers decided to collaborate with the South Asian University in India and Transilvania University in Romania. With the presence of a large number of national and foreign scholars, I hope the symposium will create new cooperations and collaborations with a view to improving the quality of research and research culture to serve humanity better.

I hope this symposium will generate very important insights that have national and global relevance in facing the most important global challenges. I wish the symposium a great success.

Professor O. G. Dayaratna-Banda
Dean, Faculty of Arts
University of Peradeniya
Sri Lanka

MESSAGE FROM THE DEAN
Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov

As the Dean of Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, it is a great pleasure for me to send a message on the occasion of the 6th Peradeniya International Economics Research Symposium (PIERS) - 2018.

Equitable, inclusive and sustainable development within a globalized economy represents a scientific challenge for all the international academic researching community. Considering this, the theme of The Peradeniya International Economics Research Symposium was considered as a very interesting one for the academic and research staff from The Faculty of Economic Sciences and Business Administration. For this reason, a significant number of our colleagues decided to send scientific materials to the Scientific Committee and they will participate at the conference with a lot of interest.

I hope we will become part of researching networks, and that our faculties will develop partnerships both in research and, also, in other domains.

I wish good luck to PIERS 2018 conference!

Thank you.

Professor Gabriel Brătucu
Dean, Faculty of Economic Sciences and Business Administration
Transilvania University of Brasov
Romania

MESSAGE FROM THE HEAD
Department of Economics and Statistics
University of Peradeniya

I am indeed honored to send this message of congratulations and appreciation as the Head, Department of Economics and Statistics for the 6th Peradeniya International Economics Research Symposium (PIERS 2018). The Department is the pioneer institution in economics education and research in Sri Lanka established in 1942, and initiated an annual economics research conference in 2013, named as "PERS". It was later enhanced as the Peradeniya International Economics Research Symposium (PIERS) in 2017.

As a novel feature this year, the symposium is jointly organized by the Department of Economics and Statistics, University of Peradeniya, Sri Lanka and the Faculty of Economics, South Asian University, India. The Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov in Romania support the symposium as a collaborative partner.

The quality of higher education provided by universities is influenced by the contribution of research through local and foreign participation. Therefore, promoting the research-teaching nexus of the university education system with the participation of foreign universities is expected to result in better outcomes. The PIERS 2018 provides wider opportunities for interactions among local and foreign Academics, Researchers, Policy Makers, Public Officials and Postgraduate and Undergraduate Students in sharpening their knowledge and research skills.

While welcoming the foreign delegates from Romania, India and Pakistan, and congratulating all presenters and the organizing committee, I wish PIERS 2018 all success.

S. Vijesandiran
Head, Department of Economics and Statistics
Faculty of Arts, University of Peradeniya
Sri Lanka

MESSAGE FROM THE CHAIRPERSON
Peradeniya International Economics Research Symposium – 2018

It is indeed a pleasure to write this message on the occasion of the 6th Peradeniya International Economics Research Symposium 2018 scheduled to be held on 8th and 9th November, 2018. This year marks a milestone in the holding of PIERS, as the symposium is organized with the partnership of the Faculty of Economics, South Asian University, India and in collaboration with the Faculty of Economic Sciences & Business Administration, Transilvania University of Brasov, Romania. We consider it a privilege to have the contribution and participation of distinguished economists from the two Universities.

The symposium aims at providing a platform for exploring the results of economic research which would contribute to our understanding of equitable, inclusive and sustainable development within a globalized economy.

The symposium includes a panel discussion, which precedes the technical sessions of the symposium on the theme of "South Asian Economic Development". It brings together a number of eminent economists from the South Asian Region and will provide an opportunity to discuss and understand the strengths, issues, opportunities and challenges faced by the fastest growing region in the world which houses one fifth of the world's poor.

This symposium is an outcome of the untiring efforts and cooperation of many people including the organizing committee. I take this opportunity to thank all individuals whose valuable contributions made PIERS 2018 possible. While warmly welcoming all of you to PIERS 2018, I hope that this will be a rewarding experience to you all.

Professor Anoma Abhayaratne
Chairperson, PIERS 2018

MESSAGE FROM THE COORDINATOR
Peradeniya International Economics Research Symposium – 2018

The Peradeniya International Economics Research Symposium is jointly organized by the Department of Economics and Statistics, University of Peradeniya, Sri Lanka and the Faculty of Economics, South Asian University, India in collaboration with the Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, Romania. PIERS, which commenced in 2013 has continued uninterrupted for six years.

On behalf of the organizing committee I take this opportunity to extend my sincere thanks to the Vice-Chancellor, the Deputy Vice-Chancellor and the Dean - Faculty of Arts, University of Peradeniya; Vice Presidents and the Dean - Faculty of Economics, South Asian University of India and the Dean, Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, Romania for extending their fullest support and guidance for this event. I thank the Keynote Speaker Professor Nicolae Marinescu, Coordinator, ERASMUS Program, Faculty of Economic Sciences and Business Administration, Transilvania University of Brasov, Romania for kindly accepting our invitation to deliver the Keynote speech in the symposium. My special thanks go to Prof. Soumya Datta, Prof. O.G. Dayaratna Banda, Prof. Anjum Altaf, Prof. Bianca Tescasium, Dr. Dushni Weerakoon, and Dr. Saneshashish Bhattacharya for accepting our invitation to participate in the panel discussion on “South Asian Economic Development”.

I would like to express my sincere thanks to the Chairperson of PIERS 2018 and the Head, Department of Economics and Statistics, University of Peradeniya for the help and cooperation extended to me in organizing this event. I also express my gratitude to all the members of the organizing committee, my colleagues and supportive staff of the Department. I also extend my sincere thanks to authors and presenters without whom this event

would not be a success. I would like to express my appreciation to the sponsors of the PIERS 2018 which mainly consists of South Asian University in India; Peradeniya University Research Grant, International Research Center (InRC), Faculty of Arts of the University of Peradeniya, Postgraduate Institutes of Humanities and Social Sciences (PGIHS), Center for Distance and Continuing Education (CDCE), Economic Society of the University of Peradeniya, Hambantota International Port Group Private Limited and PALM Foundation - Eastern Province.

I am truly grateful to the members of the editorial committee and reviewers; and chairpersons and discussants of the technical sessions of the Symposium. I thank the Director- PGIHS, Assistant Registrars and the Senior Assistant Bursar of the Faculty of Arts for their cooperation and fullest support extended to this event. I thank the Curator, Works Engineer, Public Relations Officer of the University of Peradeniya and their staff for their immense help in arranging the symposium premises.

While extending my sincere thanks to all who devoted their time to bring this sixth Peradeniya International Economics Research Symposium to a reality today, I welcome the National and International Research Community, Industry, International Organizations and Governments' Representatives to discuss and suggest solutions which will contribute to Sri Lanka as a better performing competitive country in the global economy.

I wish everyone a fruitful time!

Ms. S. Rajendran
Coordinator, PIERS - 2018
Department of Economics and Statistics
University of Peradeniya

6th Peradeniya International Economics Research Symposium

PIERS - 2018

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Keynote Address

The Role of Foreign Direct Investment for Economic Development: Evidence from Central and Eastern Europe

Nicolae Marinescu

Faculty of Economics Sciences and Business Administration
Transilvania University of Brasov, Romania

EXTENDED ABSTRACTS

PIERS – 2018

Volume VI

Tax Composition and Income Inequality in Sri Lanka

H. R. A. C.Thilanka and J. G. Sri Ranjith

Department of Economics and Statistics, Faculty of Arts, University of Peradeniya

Keywords: *Taxes; Inequality; Compliance; Co-integration; Tax Revenue*

Introduction

Tax revenue is an instrumental objective of fiscal policy. Depending on the nature of the tax, it is differently felt as a tax burden by the tax payer. With this regard, many of the existing academic discourses have focused on tax composition because it causes particular effects. Tax composition affects net inequality in two ways: first, taxes have a different degree of progressiveness, and therefore the mixture of taxes is responsible for part of inequality. Second, the tax composition affects economic incentives (e.g. labor market incentives, savings and investment), and thus indirectly affects net inequality (Drucker et. al, 2017). In the Sri Lankan context tax revenue which largely consists of indirect taxes, is the major source of financing the fiscal deficit and the means of meeting other public expenditure needs. According to the Central Bank of Sri Lanka, income taxes amounted to 16 per cent of the total tax income of the government, and indirect taxes amounted to 71 per cent in 2016 (CBSL, 2016). In fact, the poorest 20 per cent pay as much as 13 per cent and the poorest 10 per cent pays as much as 23 per cent of their income in the form of indirect taxes while the richest 10 per cent pay less than 1 per cent as indirect taxes (Ranasinghe, 2018). This evidence tells us that the tax system of Sri Lanka does not act as a helpful instrument in mitigating the income inequality.

The impact of tax composition on income inequality has gained interest among existing academic discourses in recent years. Among those, Drucker *et al.* (2017) revealed that income taxes on individuals and non-recurrent property taxes are negatively correlated with inequality and economic

growth; corporate tax impedes economic growth and has no clear impact on inequality; taxes on consumption increase both inequality and growth in developed countries. Similarly, Troiano (2017) shows that income inequality is raised after all the tax policy reforms; especially, introducing new income taxes on existing income tax has caused an increase in the inequality index. Meanwhile, "with a few exceptions the impact of tax allowances and tax credits on inequality is small and tax concessions appear ill-suited to target resources towards households in the bottom part of the income distribution in European countries" (Avram, 2014). Further, "statutory corporate income tax rates are strongly negatively associated with income inequality by controlling for various other determinants of income distribution while personal income tax rates have no impact on income inequality" (Immanuel et.al 2012). However, "progressivity of national income tax reduces inequality in observed income, but has a significantly smaller impact on actual inequality in selected developed and developing countries" (Duncan and Peter, 2017). Thus, empirical evidence suggests how tax composition affects income inequality under different scenarios. Regarding the Sri Lankan context there is a dearth of research in quantitative studies on tax composition and income inequality but, investigating the relationship is necessary due to income equality in Sri Lanka not being satisfactory compared to other countries in the region. Thus, income inequality should be minimized by means of better policies especially through simplifying the tax composition and broadening the tax basis.

Objectives

The main objective of this study is to **i**dentify the impact of tax composition on income inequality in Sri Lanka. It also attempts to identify the impact of other selected factors which affect income inequality; tax compliance and real GDP.

Methodology

This study adopts a multivariate cointegration and Vector Error Correction model to capture the dynamic relationships of selected variables following the methodology of an empirical study conducted by Kesavarajah (2016).

$$GINI_t = \beta_0 + B_1 VAT_t + \beta_2 ID_t + \beta_3 ITX_t + TC_t + LNRGDP_t + u_t \quad (1)$$

Where variables GINI, VAT, ID, ITX, TC and LNRGDP denote Gini index, value added tax or goods and services tax, import duties, income taxes which are presented as a percentage of total tax revenue, tax compliance and logarithm of real GDP respectively. Further, *u* is the white noise error term, t is the time period (1985-2015).

The study involves two steps, namely identifying the presence of non-stationarity (unit root) and long-run relationship between variables. This study uses ADF and PP unit root tests in order to identify the existence of non-stationarity or unit root. Next, Johanson cointegration test is adopted to ensure whether a long-run relationship exists when series follow the same order of integration. For the purpose of finding out the short-run relationship between variables Error Correction Model was employed. This study used annual data covering the period from 1985-2015 and data were extracted from various issues of annual report of Central Bank of Sri Lanka.

Results and Discussion

ADF and PP unit root tests were carried out to identify the order of relevant variables as a prerequisite for the co-integration test. Results of these tests show that all variables in the model are not stationary at level, but stationary at their first difference ensuring that variables are integrated in order [I(1)]. This requirement fulfills employing the Johanson cointegration test to identify the long-run relationship of the model. However, before that the optimal lag length needs to be identified using lag length selection criteria such as LR, FPE, AIC, SC and HQ. As one co-integrating relation can be identified in the system of equations at 5% level of significance it is indicated that there is a long run relationship between variables and it was obtained by employing the VECM. Long-run relationship is shown in Equation 1.

$$GINI = 57.02 + 0.06VAT^{*} + 0.15ID - 1.16ITX^{*} + 12.80LNRGDP^{*} + 0.18TC^{*}$$

.

Above results show that VAT and LNRGDP positively affect income inequality while ITX and TC affect it negatively because, these four

variables are statistically significant at 1% significant level. In line with the objective of the study, tax composition is identified as influentially affecting income inequality. VAT affects income inequality positively implying that tax on consumption adversely affects the income distribution of the country. However, as income tax negatively affects income inequality, this kind of tax can be used to address the income distribution problem along with raising tax revenue. Moreover, real GDP positively affects income inequality implying a Kuznets curve effect which is the part before the threshold level of per capita income as appropriate for explaining the Sri Lankan context. Also, tax compliance negatively affects income inequality so that a higher degree to which tax payers comply with the tax rules may help mitigate income inequality. According to the ECM, the error correction term is not significant and does not have the expected sign to bring a long-run equilibrium at the speed of adjustment implying there is no long-run equilibrium in the model. Moreover, all independent variables in the model do not affect income inequality in the short-run, implying that there is no instance response of income inequality to the change in the independent variables.

Conclusion

This study examines the impact of tax composition and other selected variables on income inequality in Sri Lanka adopting an econometric technique. The findings of the study mainly consisted of a positive impact of VAT, but a negative impact of income tax on income inequality. Along with this, the study identified that tax compliance has a negative effect while real GDP positively affects income inequality in Sri Lanka. Findings of this study suggest policy recommendations which support mitigating income inequality by taking necessary measures on tax composition in Sri Lanka. The government can broaden the income tax base and give less weight on goods and services taxes in order to reduce the gravity of income inequality. Moreover, tax policy reforms are needed to fine-tune tax compliance and minimize the income inequality.

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The Impact of Public Debt on Inflation: A Case Study of Sri Lanka

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Department of Economics and Statistics, University of Peradeniya

***Keywords**: Co-integration; Error Correction Model; Public Debt; Inflation*

Introduction

Inflation is one of the key macroeconomic indicators of a country. It is the continuous rise in the general price level of commodities. Maintaining a low rate of inflation is one of the major macroeconomic objectives. There are two types of inflation in the economy. Those are Demand-Pull Inflation and Cost-Push Inflation. Demand-pull inflation occurs when aggregate demand for goods and services rises more rapidly than aggregate supply. One potential shock to aggregate demand might come from a central bank that rapidly increases the supply of money.

Public debt is one of the major economic issues threatening the countries which are facing fiscal deficits. Public debt includes domestic and external debt. Domestic debt is a fundamental tool used by governments to finance internal and external deficits. Domestic debt is derived from different sources such as central bank, commercial banks and non-bank financial institutions. Among these three sources, borrowing from the Central Bank and non-bank financial institutions (NBFIs) carry a serious effect of inflation due to increase in money supply. If the NBFIs invest by purchasing government securities and face a shortage of liquidity, they have no option but to turn to the central bank. Also there would be no inflationary effect in the case where government borrows directly from commercial banks. When the debt is utilized efficiently it enhances productive capacity and economic growth through development related projects. Contrastingly when the debt is not effectively utilized and managed, it creates problems for the economy. Here we can sum up it that there is a direct relationship between domestic debt and inflation.

There is a significant literature which has identified the relationship between domestic debt and inflation. These include the direction from public debt to inflation, where public debt has a significantly positive effect on inflation while in the opposite direction inflation has a significantly negative effect on public debt (Bon, 2015). According to previous studies, Ahmad *et al*. (2012) have found that the volume of domestic debt and domestic debt servicing have significantly positive effects on price level. Harmon (2012) has found a weak positive relationship between the public debt and inflation while links between public debt – GDP growth as well as public debt – interest rates are negative. Also Lopes *et al.* (2014) have found public debt having a positive impact on inflation. Martin (2015) has also found a positive relationship between public debt and inflation. However, according to the literature review these findings are mixed up. It means that an exact relationship between public debt and inflation has not been identified. This motivated me to do the quantitative analysis between these two variables.

Objective

The main objective of this study was to identify the impact of public debt on inflation in Sri Lanka.

Methodology

Annual data of Sri Lanka from 1990 to 2015 was used for this study**.** Data on inflation (INF), public debt (PD), Gross Domestic Product Per Capita (GDPPC), Revenue (REV) are collected from the Annual Report of the Central Bank of Sri Lanka whereas Trade Openness (TO) was collected from the World Development Indicator (WDI) data base. Augmented Dicky-Fuller (ADF) and Phillips Peron (PP) unit root tests were conducted to test the order of integration. Akaike Information Criterion (AIC) was adapted to determine the optimal lag length of each series. The long-run relationship between the variables is shown below:

$$\mathrm{LINF}_t = \beta_0 + \beta_1 \mathrm{PD}_t + \beta_2 \mathrm{REV}_t + \beta_3 \mathrm{GDPPC}_t + \beta_4 \mathrm{TO}_t + \varepsilon_t \ldots\ldots(1)$$

Where, ε_t is a white noise error term and t refers the period of time. We used Error Correction Model (ECM) to identify the short-run relationship among the variables. The model is given below:

$$\Delta Y_t = \beta_0 + \Pi Y_{t-1} + \sum_{i=1}^{p-1} \gamma_i^* \Delta Y_{t-i} + \varepsilon_t \quad (2)$$

where, $\Pi = \alpha\beta$ where α is the (5x1) vector of speed of adjustment coefficients, β is the (1×5) vector of co-integrating coefficients, $Y_t = [INF_t, PD_t, REV_t, GDPPC_t, TO_t,]'$ vector of dependent variables, Y_{t-i}: lagged value of the Y_t and ε_t is the white noise error term.

Results and Discussion

The ADF and PP unit root tests confirmed that all the variables are stationary at their first difference and lag length selection criteria suggested the use of one lag as optimal lag length. The trace statistics of Johansen and Juselius co-integration technique identified one co-integrating relation in the system of equations at 5% level of significance. The ECM results confirmed long-run positive and significant relationships between inflation (INF) and public debt (PD), and inflation (INF) and real GDP per capita (GDPPC), a negative and significant relationship between inflation (INF) and tradeopenness (TO), and inflation (INF) and Government Revenue (REV). It is given by the following equation.

$$INF_t = -81.75 + 0.14PD_t + 0.009GDPPC_t - 0.279REV_t - 60.30TO_t$$

Indeed, the positive effect of public debt on inflation supports the view of Sargent and Wallace (1981) that an increase in public debt typically leads to inflation in highly indebted countries. Bashir *et al.* (2011) and Gyebi & Boafo (2013) showed that economic growth is one of the determinants of inflation in developing countries. According to them, high economic growth leads to high inflation. In this study, trade openness has a negative influence on inflation. It supports the hypothesis first documented by Romer (1993) that inflation is lower in more open economies. Samimi *et al.* (2012) confirmed the negative impact of openness on inflation. Further, ECM results show the coefficient of speed of adjustment and it explains how the above model adjusts towards long run equilibrium. There was a negative and significant error correction coefficient (-0.69) of inflation. It indicates that 69% of the disequilibrium is corrected each year which implies that inflation moves towards long run equilibrium.

Conclusion

This study attempts to identify the relationship between public debt and inflation in Sri Lanka. The ADF and PP unit root tests confirmed that all the variables are stationary at their first difference, suggesting that all variables considered are integrated in order one and lag length selection criteria suggested to use one lag as optimal lag length. The trace statistics of Johansen technique identified one co-integrating relation in the system of equations at 5% level of significance. The ECM results confirmed a long-run positive and significant relationship between inflation (INF) and public debt (PD), inflation (INF) and real GDP per capita (GDPPC), a negative and significant relationship between inflation (INF) and tradeopenness (TO), inflation (INF) and Government Revenue (REV) in the long-run. There was a negative and significant error correction coefficient (-0.69) of inflation. It reveals that 69% disequilibrium is corrected each year which implies that Inflation moves towards long run equilibrium. This study confirms that the public debt has a significant impact on inflation in short-run and long-run. Therefore, special attention needs to be given by the government on reducing public debt in order to eradicate the inflation in Sri Lanka. From the policy perspective, governments should manage public debt in a right way to ensure stable economic development and prevent inflation in future.

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The Impact of Tax Revenue on Economic Growth: An Empirical Analysis of Sri Lanka

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Keywords: *Revenue; Growth; Co-integration; Error Correction Model*

Introduction

It is important to analyze the impact of tax revenues on economic growth due to the fact that the state uses fiscal policy as an instrument to control the economy. A country's tax system is one of the determinants of other macroeconomic indices such as economic growth, public debt, fiscal deficit and inflation. Likewise, the macroeconomic status of a country has a major bearing on its tax structure. Specifically, there exists a relationship between the level of economic growth and development and the tax structure. Indeed, it has been argued that the level of economic development has a very strong impact on a country's tax base (Musgrave, 1969). Currently, Sri Lanka's fiscal and taxation system is at a critical juncture. While overall GDP as well as per capita income have been steadily increasing, total government revenue and tax revenue have been decreasing over time (Amirthalingam, 2013). The total revenue collection for the year, amounting to Rs.641,547 million shows an increase of Rs.81,124 million or 14.47% over that of the previous year. It amounted to a 38.02% contribution to total Government Revenue and 5.42% to GDP of the year (Department of Inland Revenue, 2016).

Domestic conflict in the north and the east of the country has severely affected Sri Lanka's economic growth. It can be seen that during the 1970s, per capita GDP growth was on average 5.6 percent and due to the civil war in the 1980s it fell down to only 1.6 percent. However, in spite of the impacts of civil war, economic growth has improved during the 1990s and later. Per capita GDP growth was on average 4 percent during the 1990s and in 2007 it

was 4.9 percent and then decreased to -1.5% in 2001 due to the ethnic conflict. However it was recorded as 7.3% in 2013. But GDP growth in 2016 was 5.4 percent (Central Bank of Sri Lanka, 2016).

There is a problem in Sri Lanka which is, tax revenue as a percentage of GDP has continuously declined. Direct taxes (mainly income taxes) as a percentage of GDP remained at an average of 2.5 per cent during 1990-2016 (Central Bank of Sri Lanka, 2016). It shows that the decline in the tax ratio is clearly due to a decline of indirect taxes as a percentage of GDP. There are two issues here. On the one hand, Sri Lanka could not prevent the declining trend of indirect tax revenue as a percentage of GDP, and on the other hand the country could not enhance the direct tax revenue as a percentage of GDP with a view to offsetting the decline of indirect tax revenue as a percentage of GDP.

The theoretical literature suggests that taxes have a negative effect on economic growth (Athukorala and Karunarathna, 2004). Thus, high tax rates diminish economic growth. The reason for this is that higher rates may be more distortionary and hence impact growth negatively while lower rates may generate revenues that are spent in productive ways. However, the empirical literature suggests both direct and inverse relationship between tax burden and rates of growth. Mashkoar *et al.* (2010) examine the association among tax revenues and the speed of economic growth, for Pakistan by taking annual data from 1973 to 2008 and applying an ARDL approach. Findings show that a high rate of direct taxes would augment real economic growth. Taha et al. (2011) examine the causal relationship between these two variables, both in the short run and the long run. Results show that there is a unidirectional connection between economic growth and tax revenues. In the Sri Lankan context there is no empirical study regarding the dynamic relationship between tax revenue and economic growth. Therefore, this study is intended to fill the study gap to help fiscal policy making in Sri Lanka.

Objective

The objective of the study is to examine the impact of tax revenue on economic growth of Sri Lanka.

Methodology

Annual data of Sri Lanka over the period of 1990-2016 have been used in this study. The data of LNRGDP (Real Gross Domestic Product) is a dependent variable, real GDP growth was bring into play as a substitute (proxy) for economic growth. It was collected from annual reports of the Central Bank of Sri Lanka (CBSL). LNTTR (total tax revenue) is a combination of direct and indirect taxes, PSE is school enrollment, secondary (gross), IMP represents imports of goods and services, FDI is foreign direct investment(net), CMD are customs and other import duties, LAF is Labour force participation (total), and were extracted from the World Development Indicator (WDI) database of the World Bank. Endogenous growth models developed by Barro (1990), Mendosa, Milesi-Ferreti and Asea (1997) predict that fiscal policy can affect the level of product and long run economic growth. Thus, we construct a regression model based on the above mentioned endogenous growth model. Model estimation begins with the analysis of the order of integration of each variable using Augmented Dickey Fuller (ADF) and Philips-Perron (PP) unit root tests for this analysis. The co-integration test was conducted using the Johansen approach to test for long run relationship between variables. The model can be described as:

$$\mathrm{LNRGDP_t} = \alpha_0 + \alpha_1 \mathrm{LNTTR_t} + \alpha_2 \mathrm{LNSEE_t} + \alpha_3 \mathrm{LNLAF_t} + \alpha_4 \mathrm{LNCMD_t} + \alpha_5 \mathrm{LNFDI_t} + \alpha_6 \mathrm{LNIMP_t} + \mathrm{u_t} \qquad (1)$$

The following error correction model (ECM) was employed to test for the short-run relationship between variables.

$$\Delta \mathrm{Y_t} = \delta_0 + \Psi \mathrm{Y_{t-1}} + \sum_{i=1}^{p-1} \Upsilon_i^* \, \Delta \mathrm{Y_{t-i}} + \varepsilon_t \qquad (2)$$

where, $\Psi = \alpha\beta'.\alpha$: is the (7x1) vector of speed of adjustment co-efficient, β': (1x7) vector of co-integrating coefficients and

$\mathrm{Y_t} = [LNRGDP_t, LNTTR_t, LNSEE_t, LNLAF_T, LNCMD_t, LNFDI_t, LNIMP_t]$

is a vector of endogenous variables, $\mathrm{Y_{t-i}}$ is the lagged value of the variables and ε_t is the white noise error term.

Results and Discussion

Based on the ADF and PP unit root tests, all variables of this study are stationary at level form. Therefore, this result also suggests that all eight variables are integrated in the same order, i.e. I(1). Once we established the order of integration, the study process requires the estimation of the long-run relationships among the variables included. However, before estimating this relationship we need to identify the optimal lag length of the model. Using VAR model, all the lag length selection criteria except AIC suggest the use of one lag as optimal lag length. Therefore, we included one lag in our model. Trace test statistics identified one co-integrating relation in the system of equations at 5% level of significance since we reject null hypothesis at rank 0 but we failed to reject null hypothesis at rank 1. Following equation shows the long run relationship of the Model.

$$lnRGDPG_{\mathrm{t}} = -58.41 - 1.11\ln\mathrm{TTR}_{\mathrm{t}} + 2.75lnLAF_{\mathrm{t}} + 0.54\ln CMD_t + 0.13\ln\mathrm{FDI}_{\mathrm{t}} + 13.36\ln\mathrm{SEE}_{\mathrm{t}} + 0.36\ln\mathrm{IMP}_{\mathrm{t}} \quad (3)$$

As shown in Equation 3, the results of all variables are significant at 5% level of significance in the long-run. Total tax revenues have a negative relationship with economic growth, while labour force, foreign direct investment, customs and other import duties, school enrollment and imports have a positive link with economic growth. Due to a one percent increase in total tax revenues, economic growth would be reduced by 1.11 percent in the long run. A negative and significant error correction coefficient (-0.016) of LNRGDP reveals that 1.6 % disequilibrium is corrected each year which implies that Real GDP growth moves downward towards long run equilibrium path.

Table 1: Results of Short Run Relationship

Regressors	D(lnGDP)
D(ln RGDP(-1))	0.495 [4.882]
D(ln TTR(-1))	-0.991 [-1.197]
D(ln CMD(-1))	1.544 [6.053]
D(ln LAF(-1))	-0.386 [-0.195]
D(ln IMP(-1))	0.646 [1.696]
D(ln FDI(-1))	0.318 [4.172]
D(lnSEE(-1))	12.204 [1.200]
C	-0.300 [-2.529]

Note: t statistics are given in the parenthesis

Table 1 shows the short-run negative relationship between RGDP growth and Total Tax Revenue. And also foreign direct investment, customs and other import duties and import have a positive impact on Real GDP growth. But other variables (LNLAF, LNSEE) do not have a significant impact on economic growth in the short run in models.

Conclusion

The major intention of this research is to investigate the association, involving total tax revenue and economic growth, over the period 1990-2016, in both long and short run. Total tax revenues have a negative and significant effect on economic growth in the long run. Due to a one percent increase in total taxes, economic growth would decrease by 1.113 percent. In the short run, total taxes revenue has a positive impact on economic growth.

There is also a need to augment the tax base/network and setting good precedence with improved tax administration. Therefore the research results show that total taxes have a negative impact on economic growth. Due to weaknesses in tax revenue administration, the level of tax collection continues to be lower than optimal in Sri Lanka (Waidyasekera, 2004). This could be the reason for negative impact of total tax revenue on economic growth. Political favoritism, political influence, and a lack of a clear cut political rationale on taxation have also adversely affected the tax revenue potential (Amirthalingam, 2010). Thus, special attention needs to be given by the government in order to promote RGDP growth rate and fiscal consolidation by reforming tax policy.

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Estimating the Relationship between Government Spending and Private Consumption in Sri Lanka

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Keywords: *Government Spending; Consumption; ARDL Model; Sri Lanka*

Introduction

In general, government plays a vital role in the development process and contributes to ensure the social welfare of a country. In order to achieve a country's macroeconomic goals, the government intervenes in the economy in particular through fiscal policy. Government spending is a key component of fiscal policy which can be used to stabilize the economy over the course of the business cycle. Impacts of government spending on aggregate economic activity have been subject to vast discussion under different schools of thought. According to Keynes's Absolute Income Hypothesis, households' current consumption responds to current disposable income; thus an increase government spending leads to increase in output and employment (Athukorala and Karunarathna, 2004; Khan *et al.*, 2015). In contrast, under neoclassical theory and New Keynesian theories, expansion of government spending will crowd-out private consumption through negative wealth effect dominance (Agibaeva, 2015).

In the Sri Lankan context, although the government plays an important role in the economy, lack of fiscal discipline appears as one of the hurdles in accelerating economic growth due to a mismatch between government spending and revenue. Government expenditure, which consists of recurrent and capital expenditure shows an increasing trend while recurrent expenditure grew rapidly compared to the capital expenditure.. However, the government expects to stimulate economic activity with the help of engaging

in a large range of government spending. Meanwhile, economic growth shows a decreasing trend in recent years. Since private consumption is a major component of aggregate demand, it is important to find ways to boost private consumption for smoothening of economic performance especially when there is a weak growth.

Since the relationship between government spending and private consumption is a major concern of current academic discourse, a large number of empirical studies has focused on it and present mixed results. Khan *et al.* (2015) found government spending to have a positive impact on private consumption implying that government spending is a very good instrument to boost the economy. Similarly, an increase in government purchases leads to an increase in output and private consumption. The increase in labor remuneration induces households to sacrifice leisure in favor of consumption (Ravn et. al, 2007). Moreover, government spending increases or crowds-in private consumption following a spending shock because of the multiplier effect (Blanchard & Perotti, 2002; Athukorala and Karunarathna, 2004). This positive effect is also justified by the empirical studies of Ganelli & Tervala (2009) & Ihori (1990). In contrast, according to a study of OECD countries conducted by Ho (2001), the permanent income hypothesis is rejected and the crowding-out effect of government spending is supported. Moreover, there is substitutability between government spending and private consumption in the US economy (Kormendi, 1983).

Thus, findings of empirical studies contribute to broadening the existing knowledge on government spending and private investment in different scenarios. However, in the Sri Lankan context, research on government spending and private consumption is inadequate to trace the effects and contribute towards poliy formulation. Meanwhile, economic growth in Sri Lanka is required to accelerate, especially through inducing greater aggregate demand since the growth rate has slowed down. Hence, considering the current importance, this study attempts to fill the existing knowledge gap by investigating the nexus between government spending and private consumption in Sri Lanka.

Objectives

One objective of this study is to identify the impact of government spending on private consumption in Sri Lanka. The other objective is to contribute towards policy formulation to enhance the aggregate performance of the economy using selected variables.

Methodology

This study uses annual data covering the period 1980-2016 and data were extracted from Annual Reports of the Central Bank of Sri Lanka and from World Bank publications. A time series econometric method is employed for the study. The regression which was built using some selected variables following a study conducted by Khan et. al. (2015) is shown below.

$$LPC_t = \beta_0 + \beta_1 LGTS_t + \beta_2 LER_t + \beta_3 GDPR_t + u_t \qquad (1)$$

where, variables LPC, LGTS, LER and GDPR denote respectively logarithm of private consumption, logarithm of government spending, logarithm of exchange rate and growth rate of real GDP; u_t is a white noise error term, t = 1,2,…T. As the first step of the estimation, ADF and PP unit root tests were adopted to test the stationary property of data. When series are stationary at I(0) and I(1) Autoregressive Distributed Lag (ARDL) model which was developed by Pesaran *et al.* (2001) can be employed to find out the long-run and short-run relationship and long-run adjustment. The ARDL co-integration bound testing procedure is shown by Equation 2.

$$\Delta LPC_t = \rho_0 + \vartheta' LZ_{t-1} + \sum_{i=1}^{p} \eta_i \, \Delta LPC_{t-i} + \sum_{i=0}^{p} \pi_i' \, \Delta LZ_{t-i} + \varepsilon_t \qquad (2)$$

where, $\vartheta' = [\vartheta_1, \dots, \vartheta_4]$ refers to the long-run coefficients;

$LZ_{t-1} = [LPC_{t-1}, LGTS_{t-1}, LER_{t-1}, GDPR_{t-1}]$ is the vector of explanatory variables with lag one; $\eta_i \; and \; \pi_i' = [\pi_{1i,\dots}\pi_{3i}]$ refers to the short-run dynamic coefficients.

$\Delta LZ_{t-i} = [\Delta LPC_{t-i}, \Delta LGTS_{t-i}, \Delta LER_{t-i}, \Delta GDPR_{t-i}]$ denotes the vector of explanatory variables with lag i and ε_t is the white noise error term.The error correction version (ETC_{t-1}) of ARDL model is shown in Equation 3 as a transformation of Equation 2.

$$\Delta LPC_t = \beta_0 + \sum_{i=1}^{p} \eta_i \, \Delta LPC_{t-i} + \sum_{i=0}^{p} \pi_i' \, \Delta LZ_{t-i} + \gamma ETC_{t-1} + \varepsilon_t \quad (3)$$

Where γ is speed of adjustment which should be statistically significant and should have a negative sign. $\varepsilon_t$is a pure random error term. The first stage of the estimation bound testing procedure is employed in order to investigate the existence of long-run relationship. Meanwhile as this methodology considers both short-run and long-run relationships it facilitates policy making to attain expected changes of the economy through these variables.

Results and Discussion

According to the results of the ADF test, GDPR is stationary at level while the other variables of the model are stationary at 1st difference implying that variables are stationary at combination of I(0) and I(1) Thus, series are of different integrating orders, so that it is suggested to proceed with ARDL model. According to the lag length automatic selection following Akaike Information Criterion (AIC) the best model is ARDL (3,2,0,1) for the analysis. As a pre-requisite for accurate estimations, diagnostic tests were employed and results are given in Table 1

Table 1: The Results of Diagnostic Tests

Test	Probability
Normality Test (Jarque-Bera)	0.4537
Serial Correlation (BG LM test)	0.3927
Ramsey RESET test	0.1532
Heterockedasticity test (BPG)	0.9730

Results of above mentioned diagnostic tests confirm that residuals are distributed normally, residuals are not serially correlated, there is no specification error in the estimated model and disturbance term in the equation is homoscedastic, respectively. Meanwhile, recursive estimates

CUSUM plot lies within the upper and lower critical bound at 5% significant level so that it ensures the stability of parameters. As the next step of estimation, the results of bounds test show that F-statistic is 13.05 which exceeds the critical value of upper bound, 4.66 ensuring the presence of the long-run relationship.

Table 2: Results of ARDL (3,2,0,1) Model
Dependent Variable: LPC

Panel A: Long-run Coefficient Estimates				
Constant	LGTS	LER	GDPR	R^2
2.180	1.404*	-0.784*	0.145*	0.997
(0.000)	(6.401)	(-2.326)	(5.720)	
Panel B: Short-run Coefficient Estimates				
Lag Order	ΔLPC	ΔLGTS	ΔLER	ΔGDPR
0		0.020	-0.538***	0.009
		(0.224)	(-1.747)	(1.536)
1	-0.172	-0.148		0.009***
	(-1.143)	(-1.222)		(1.803)
2	0.171	0.105		
	(1.118)	(0.973)		
3	0.197			
	(1.059)			
Panel C: Error Correction Representation				
ETC(-1)	-0.152			
	(-1.885)***			

Note: t-statistics are given in parenthesis. *, **, *** show significant at 1%, 5% and 10% level respectively

According to the results all independent variables in the model are significant implying that variables affect the dependent variable, private consumption in the long-run. In line with one of the objectives of the study, government expenditure positively affects private consumption in the long-run, suggesting that government expenditure can be used as an influential instrument to boost the aggregate demand of the economy. Further, this finding is consistent with the findings of other empirical studies (Khan: 2015, Ravn et. al: 2007, Blanchard & Perotti: 2002). Moreover, GDPR has a

positive effect and ER a negative effect on private consumption in the long-run, implying that favorable economic growth is advantageous but, exchange rate depreciation is not advantageous for private consumption. Results of short-run relationship and long-run adjustment coefficients are represented in Panels B and C respectively. With regard to short-run relationship, one period lagged value of GDPR has a positive and significant impact on PC while LER has a negative and significant impact on PC in short-run. Meanwhile, ECT(-1) appears with negative sign and is significant, implying that the whole system can get back to the long-run equilibrium at the speed of 18.85% one period after the exogenous shock.

Conclusion

Empirical results show that government spending positively affects private investment in the long-run but not in the short-run. This ambivalence can be justified through government spending on wages which flow to households as income and then it leads to an increase in the level of private consumption. Thus, it is advisable to pay more attention to government spending in order to boost the economic performance of the country. Likewise, growth rate of real GDP positively affects private consumption implying that a higher level of growth stimulates the aggregate functioning of the economy. However, since exchange rate has a negative effect, the government should be aware of depreciation and take necessary action. Since there is no substantial impact related to the short-run, policy formulation should be focused on long-run adjustments of the variables.

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Determinants of Female Labor Force Participation in Afghanistan

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***Keywords**: Afghanistan; Female; Education; Ordered response model*

Introduction

Afghanistan's economy possesses some features that are hard to find in any other South Asian economy (for example, the age composition of Afghanistan). According to the Afghanistan Living Condition Survey (ALCS) 2014, nearly half of the country's population is less than 15 years old. The Fertility Rate in Afghanistan, although it is still very high at around 6, is showing a downward trend. This means that, while other South Asian countries are currently experiencing their demographic dividend, Afghanistan is yet to enter this phase. This gives Afghanistan a unique opportunity to prepare itself, so that it could better reap the benefit of its demographic dividend.

When considering the present condition of Afghanistan's economy, the future doesn't look promising. Afghanistan is trapped in a chronic employment crisis. The unemployment rate, according to the 2014 Afghanistan Living Condition Survey (ALCS) Round was about 22.6 per cent, which further increased to 23.9 per cent in 2017. Due to the very young population of Afghanistan, the dependency ratio is already very high (close to 100). To worsen the situation, the female labor force participation rate in Afghanistan is abysmally low. In this study, we look at the determinants of labour market participation decisions of women in Afghanistan. It also focuses on the social and economic determinants of female labor force

participation decision, with major focus on education. Furthermore, we will try to identify the factors that ultimately lead to women being remuneratively employed, once they enter the labour force.

Objectives

In this paper we aim to study the social and economic determinants of the female labor force participation rate in Afghanistan. More specifically we focus on how the female labor force participation rates depend upon the education level of the individual and education level of the head of her household. We will also control for the prosperity of the household (measured by household assets and perceptions of economic conditions) and employment shocks (such as recent death, injury or loss of employment of an earning household member) faced by their household. Also, we will explore various factors that determine the prospects of women, when she does enter the labour force.

Methodology

Using the unit level data from ALCS 2013-14, we estimate an ordered probit model with sample selection and nested model, developed recently by Luca and Perotti (2010). Using this technique we first estimate a binary dependent variable model, with dependent variable which takes the value one if the woman in concern is in the labor force and zero if the woman is not in the labor force. Our main variables of focus will be literacy status of women and highest education level in the households. We will control for the usual demographic factors such as age, region (rural, urban and Kuchi - the tribal households), marital status, whether delivered a baby in last 5 years and the perception of the eldest female in the household on local security conditions. We also focus on various household characteristics like size of the household, recent employment shocks faced by the household (like death/injury of a working household member, loss of job of a household member etc.), whether she is the head of the household and whether she belongs to a cultivating household (households that irrigate its own land or have access to some other land for irrigation).

Results and Discussion

The estimated ordered response model of labour market prospects with sample selection for labour force participation decision provides us some interesting results. For example, we see that the literacy rate of women significantly increases her chance of joining the labour force. We also see that women who are part of larger households tend to not join the labour force. The results also explain how different variables affect the prospects of women in labour market, conditioned on the fact that she decides to join the labour force. The marginal effects of the three ordered prospects (namely-unemployed, employed as an unpaid family labourer or employed as a paid employee / self-employed) can be compared. For example, we can see that, other things being equal, a unit increase in the educational level of women significantly increases her prospects in the labour market. The marginal effects for the same indicates that a unit increase in educational level of women decreases her probability of being unemployed by 0.63%, decreases her probability of being an unpaid family labour by 0.5% and it increases her chances of getting a paid job (or being self-employed) by 1.15%.

Results clearly suggest that if appropriate policy decisions are taken in the direction of increasing female supply of labor, Afghanistan might be able to better reap the benefits of its demographic dividend, which will have positive long term consequences. For this, the government must focus seriously on educating the women folk in Afghanistan. Currently the female literacy rate of Afghanistan is just 21.93 per cent. The West and Central Hazarajat regions (with literacy rates of just 20.8 per cent) would need special attention. Since such reforms have been met with rebuttal and violence in the past, especially in the tribal (Kuchi) areas, the present scheme of reforms should not just focus on women. Rather, it should challenge the patriarchic norms of the society by spreading awareness among all the sections of the society. We saw in our results that having access to the internet can significantly improve the prospects of women in the labour market. Therefore, access to information technology, like internet should be widely promoted and literacy programmes must also focus on enhancing digital literacy among the masses. Note that these schemes must be seen as a set of wider action plan of the government to address the growing pressure of unemployment in Afghanistan.

Conclusion

Our results indicate that better education plays a vital role in increasing the chances of women to be fare better in the labour markets. Dependence on husbands, on the other hand might act as a barrier for women to join the labour force. This is because being the head of the household significantly increases the chances of a woman choosing to be a part the labour force and also, married women significantly abstain from entering the labour force. Interestingly, perception about economic situation and employment shocks in the past one year does not increase/decrease the probability of entering the labour market, or one's prospects in the labour market.

Rural and Kuchi household women tend to be more active in the labour force than urban women, although, once they do enter the labour force their prospects are not significantly different from those of urban women. One factor that does increase the prospects of women in the labour market is internet facility at the household, indicating that access to information in the household can significantly increase the chances of women getting paid jobs in the labour market. Finally, as expected, women in the socio-economically backward and violence ridden region of Western Afghanistan and central Hazarajat, fare far worse in the labour market, with respect to the women in other parts of Afghanistan.

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The Impact of International Remittances on Household Expenditure Patterns: Where Does the Money Go?

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***Keywords**: Household; Expenditure; Remittances, Migration*

Introduction

Remittances play an increasingly important role in developing countries, particularly in the economies of South Asia. Sri Lanka is one of the economies that receive a high value of international remittances in the Asian region. There is a growing interest on studying how remittances are spent and to find out whether its usage affects economic development. The inflow of remittances to Sri Lanka is increasingly contributing to the rapid growth of the country's GDP which was 9% (CBSL, 2015). The exchange rate was also depreciating significantly in the past couple of years increasing the domestic monetary value of remittances. There are three main arguments on the use of international remittances in household expenditure. Randazzo and Piracha (2014) state that the remittance receiving households may perceive the international remittances as transitory income, compensatory income or as just another source of income, and as a result the expenditure pattern may depend on the nature of perception.

Remittances are a key element in identifying the net impact of international migration on the country of origin. In Sri Lanka's national accounts, workers remittances are treated as a component of national savings. There is a growing interest on how remittances are spent and whether the use of remittances may have an impact on the economic development of the country. Although there are several studies on remittance to Sri Lanka from international migration such as Samaratunge et al, (2012) and Prabal and

Ratha (2012), little is known of the impact of international remittances on household expenditure patterns in the recent past.

The existing literature provides contradictory arguments on the way remittances are perceived by the remittance receiving households. For example, Samaratunge et al, (2012) and Chami et al. (2005) consider it as compensatory income whilst Mahapatro et al. (2015) and Tabuga (2008) suggest it is transitory income, and Randazzo and Piracha (2014), as well as Adams, Jr. (2005) argue that it is just another source of income. Hence, the objective of this research is to analyze the impact of international remittances on household expenditure patterns in Sri Lanka and thereby generate policies for effective use of international remittances in Sri Lanka.

Objectives

International migration in Sri Lanka is in an increasing trend over the past two decades and international remittances follow the same. Sri Lanka is one of the leading economies in the South Asian region with a rapid growth in foreign workers' remittances. The existing literature argues that international remittance significantly affects the expenditure patterns of the households. In this context, this paper examines the impacts of international remittance on the household expenditure patterns in Sri Lanka and investigates how remittances are utilized by the remittance receiving households. The main objective of the study is to analyze the relationship between the international remittances and the total household expenditure disaggregated by food, non-food, and liquor, drugs and tobacco expenditure.

Methodology

The study was conducted using secondary data collected from the Household Income Expenditure Survey (HIES, 2012/13). The HIES data is collected as a year-long sample survey conducted in 12 consecutive monthly rounds, covering all 25 Districts. The study uses Ordinary Least Squares (OLS) as one of the main analytical techniques, while the Propensity Score Matching (PSM) method is applied to overcome the possible selection bias due to the endogeneity in the household receipt of remittances generated by OLS. This problem was highlighted in Yang (2005). To deal with this issue, expenditure behavior of households receiving remittances should be

compared with that of similar households without migrants while controlling for the endogeneity of migration choices and thereby, remittances. Therefore, the study employs the PSM method as an alternative approach. International remittance to the household was the dependent variable and age of the household head, highest education in the family, household size, land size, employment status, and wage income were the major independent variables included. Working-Lesser Model was taken as the major theoretical model for the analysis.

Results and Discussion

The inflow of international remittances is increasing over the years. In 2013, the remittances received from international migration by the households was Rs.6.4 billion or 8.64% of the country's GDP and in 2015 it was Rs.6.98 billion, amounting to 9% of the GDP (CBSL,2015). Therefore, it is important to explore what changes this increasing amount of remittances makes on the consumption pattern of the households. Average consumption of a household in Sri Lanka in the survey year was Rs. 41,587 while average consumption of a remittance receiving household and non-remittance receiving household was Rs. 45,738 and 41,322 respectively. This shows that on average a remittance receiving household spends more than the amount spent by the non-remittance receiving receiving household.

The analysis in the paper is mainly based on OLS regression and Propensity Score Matching (PSM) method. After controlling for the other variables, OLS estimates suggested that compared to a non-remittance receiving household, a remittance receiving household spends more than Rs. 7000 which was statistically significant at 99 %. Further, it showed that remittance receiving households spend more on non food expenditure. OLS analysis also suggested that education and household size has a positive statistically significant effect on household consumption.

PSM analysis showed that the coefficient of the average treatment effect of the treated is 8287.69. This implies that the households who are receiving international remittances spend approximately Rs. 8288 more than households who do not receive international remittances. Furthermore, the analysis found that the households who receive international remittance spend more than Rs. 1212.47 on food, compared to households that do not

receive international remittances. Importantly the results generated by using PSM analysis confirmed that, compared to the households not receiving remittances, households which receive international remittances spend more on non-food items such as durable goods, healthcare, education and investments and they spend less on food,and liquor, drugs and tobacco. The coefficient of the expenditure on non-food was Rs. 4442.6 which is strongly supported by Mahapatro et al. (2015), Adams, Jr (2006) and Tabuga (2008) which found that households who received remittances spend on investment activities and less on consumption. The households with similar characteristics of receiving remittances are compared using PSM technique. The study used the nearest neighbor matching method to estimate the average treatment effect on the dependent variable. However, the study suggests that there is no relationship between international remittance and household expenditure on liquor, drugs and tobacco. This could be due to migration of male (male household's heads) member(s) of the family.

Table 1: Estimated coefficients using PSM and OLS analysis

Variable	PSM	OLS
Total household expenditure	8287.6***	7904.7***
expenditure on food	1212.4***	1087.1***
expenditure on liquor, drugs and tobacco	87.9***	-17.5***
expenditure on non-food	4442.6***	7380.7***

Source: Authors' estimations using HIES 2012/13 data

Conclusion

International remittance has become an important foreign currency earning source in Sri Lanka and can potentially play a significant role. The analysis showed that international remittances have a stronger impact on household expenditure; especially the expenditure on non-food items (durables). But, receiving remittance does not have any statistically significant impact on expenditure on liquor and tobacco. The OLS and PSM estimates generated similar results. Therefore, the study confirmed that the international remittance receiving households tend to spend more on investment goods while spending less on food items and alcohol. As the international

remittances increase the expenditure on non food and non alcohol items, the study recommended that entrepreneurs should be given more opportunities to attract investment from the families with international remittances.

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Workers' Remittances and Economic Growth: A Study in Sri Lanka

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Keywords**:** *Remittances; Growth; Developing Countries; Sri Lanka*

Introduction

The recent period witnesses a steady inflow of remittances to developing countries. Their flows to developing countries contribute the second largest source of external finance after foreign direct investment (FDI) (Ahamada and Coulibaly, 2013) and are about three times larger than official development assistance (Wolrd Bank, 2015). Officially recorded remittances to developing countries were $435 billion in 2014, an increase of 5 percent over 2013. Total remittance flows to developing countries have increased more than six–fold during the period 1995 to 2015 amounting to $454 billion in 2015 (World Bank, 2015).

Remittances have a potential positive impact as a development tool for the recipient countries. The development effects of remittances can be decomposed into its impact on savings, investments, growth, consumption, and poverty and income distribution. The impact on growth of remittances in the receiving economies is likely to act through savings and investment as well as short-run effects on aggregate demand and output through consumption. Workers' remittances are a component of foreign savings and they complement national savings by increasing the total pool of resources available for investments (Solimano, 2003).

According to the literature, some researchers have found that when people migrate - especially females – that has a negative impact on society (Lipton, 2002). On the other hand, others perceive workers' remittances as having a significant positive impact on the economic situation (Ratha, 2003).

Although the evidence on the effect of remittances on long-term growth remains inconclusive, in economies where the financial system is underdeveloped, remittances appear to alleviate credit constraints and may stimulate economic growth, via financing education and health and increasing investments. Some analysts and scholars argue that remittance benefits are only felt at the individual receiver level, but some case studies suggest that the benefits of remittances to individuals have spill-over effects that can translate into a positive impact on the local economy (Carrasco and Ro, 2007). However there is no clear direction between remittances and GDP per capita in Sri Lanka.

Objectives

To investigate impacts of workers' remittances on GDP per capita in the long run and short run in Sri Lanka.

Methodology

The relationship between workers' remittances and GDP per capita in Sri Lanka is examined using annual time series data covering the period of 1990-2016. The data was extracted from the annual reports of the Central Bank.

$$GDPPC_t = \beta_0 + \beta_1 REM_t + \beta_2 EXPO_t + \beta_3 INV_t + \beta_4 FDI_t + \varepsilon_t$$

where *GDPPCt* is per capita GDP, *REMt* is ratio of workers' remittances to GDP, *EXPOt* is ratio of exports to GDP, *INVt* is ratio of gross domestic investments (including both private and public sector fixed capital investments) to GDP, and *RFDIt* is the ratio of foreign direct investment inflow to GDP and ε_t is the usual white noise error term which includes the effects of omitted factors.

ADF test and PP test was used to test the stationary property of time series data and Lag Length criteria test was adopted to identify lag length in the model. Engle-Granger co-integration is used to investigate the long run relationship between variables. Then the VECM is used to identify the short run relationship.

Results and Discussion

The results of the unit root test confirmed that all variables are stationary at their first difference, suggesting that they are integrated in order one. The lag selection criteria suggested one lag as an optimal. Johansen Co-integration rank test identified one co-integrating relationship among selected variables with confirming long run relationship. Results of the long run model are as follows:

$$GDPPC_t = \underset{}{13.08} + \underset{[2.19]}{4.51REM_t} + \underset{[2.17]}{2.42EXPO_t} + \underset{[2.13]}{9.72INV_t} + \underset{[3.40]}{8.37FDI_t}$$

Note: t values are given in the parenthesis.

Accordingly, export ratio, domestic investment, remittances and FDI have positive relationship with the GDPPC in the long run, whereas remittances has negative significant impact on the short run. A negative and significant error correction coefficient of (0.039%) reveals that 3.9% disequilibrium is corrected each year.

Conclusion

This study suggests that increasing of remittances have a significant negative effect on GDPC but a positive significant impact in the long run. Thus the research confirms remittances have mixed results in the economy. So policy makers should try to reduce negative impacts of it by taking appropriate measure to utilize remittances at the grassroot level in the country. Most of the previous studies show that, compared to the households not receiving remittances, households which receive international remittances spend more on non-food items such as durable goods, healthcare, education and investments and spend less on food, liquor, drugs and tobacco. Therefore, it is of paramount important to provide incentives for investing remittances for their own benefits rather than spending for consumption purposes.

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Identifying Factors Affecting the Success of Rural Self-Employment: A Study Based on Ambalantota Divisional Secretariat

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***Keywords**: Self-employment; Education; Training; Experience.*

Introduction

Creating self-employment opportunities is a way of improving the socio economic status of a country's rural economy. There are enough natural resources to create self-employment businesses in rural area such as lands and raw materials. Therefore, especially rural people in Sri Lanka pay attention towards self-employment. Many rural inhabitants in Sri Lanka are self-employed (International Labour Organization, 2014). In general, successful self-employment contributes to increased production, income and eventually, the eradication of rural poverty. In Sri Lankan, self-employment is a way of creating a larger space in the job market to promote work opportunities for the unemployed people. Gindling and Newhouse (2014) (cited in. De Mel et al, 2010) find most workers in developing countries to be self-employed. During the period 1991 to 2013 the percentage of self-employed in total employment increased yearly. In 1991, percentage of self-employed in total employment was 37.60 and 46.30 in 2013 (International Labour Organization, 2014).

In this research, we have attempted to identify the education, training and experience affecting the success of rural self-employed individuals and trends of self-employment. Nature of self-employment activities can be categorized into two parts; viz. non-farm and farm self-employment (Trends in non-farm self-employment activity for rural women, 2004). The majority

of rural people in Sri Lanka engage in non-farm self-employment activities such as sweets production; producing and selling of spices; producing incense sticks, soap, wicks, handicraft productions, and bakery foods; services of beauty and hair cutting saloons; fashion designing, dress making and tailoring etc. Examples of farm self-employment are cultivation of mushrooms, flowers, vegetables and fruits, and animal production that are related to agriculture.

The literature provides information as to what factors affect the success of self-employed individuals. According to Robinson and Sexton (1994) self-employment success was measured by monthly income and education, training, experience, developed technology, age of self-employer and gender. The results indicate that education, training, and experience mainly affect the success of self-employment among rural inhabitants. Timothy (1995) finds that the self-employed are highly educated individuals often possessing financial resources. In 2009 Macieire analysed the impact of self-employment experience on income. The results indicate that experience and earnings from self-employment have a positive relationship and this quality of self-employment tends to be crucial for the success of a business.

Objective

The main objective of this study is to analyse the effects of training, experience and education of self-employed individuals on the success of having rural self-employment in Sri Lanka. Secondary objectives include, identifying the nature of self-employment activities and the major problems which are faced in the self-employment in rural inhabitants.

Methodology

A sample of 30 self-employed people living in the Ambalantota Divisional Secretariat in Hambantota was selected using a simple random sampling method. Questionnaire interviews were used to collect primary data. The study uses descriptive analysis and the Multiple Regression Model and uses the success of self-employment as the dependent variable (Y): self-employment success was measured by monthly income. The multiple linear regression model is specified as follows.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 D_{1i} + \beta_7 D_{2i} + \beta_8 D_{3i} + u_i$$

X_1- Monthly savings from self-employment (Rs.)

X_2- Numbers of family workers engaged in the business

X_3- Experience (numbers of years)

X_4- Age of self-employed

X_5- Education (numbers of years).

There are three qualitative variables that have been included in the multiple regression model as dummy variables. D_1 is usage of machine, use = 1, otherwise 0, D_2 is vocational training of the self-employed, yes = 1, no = 0. D_3 is Gender of the self-employed, male = 1, otherwise = 0.

Results and Discussion

The results of the multiple regression model show that R^2 is 0.97. The estimation results show the overall regression model to be significant at the 5% significance level and that the overall goodness of fit is high. It indicates that the independent variables used explain about 97% of the success of self-employment. Moreover, the results indicate that there are a number of key significant factors such as savings, number of family workers engaged in the business, education, experience, training, usage of machine and gender affecting the success of self-employment; which are statistically significant at 5% and 10% confidence levels. Technology tends to be significant at the 10% confidence level. Age of self-employed is not significant at 5% and 10% confidence levels.

Table 1: Results of Multiple Regression Model

Independent variables	Coefficient
X_1	1.094 (4.01)*
X_2	2363.867(2.98)*
X_3	428.727(2.28)*
X_4	17.121(0.29)
X_5	986.465(2.78)*
D_1	4193.128(1.98)**
D_2	6123.159(3.44)*
D_3	-2756.731 (-2.16)*
-cons	4340.327 (1.88)**

Note: * 5% significance level **10% significance level

According to the analysis, 27% of the sample is engaged in farm self-employment activities and 73% is engaged in non-farm self-employment activities. The results also indicate demographic factors such as age, gender and family background, human capital and experience and economic factors affect the likelihood of being self-employed in the country's rural economy. As per the results, 53% of the sample is female self-employed and 47% is male. The highest proportion of self-employed is found between the ages of 24-30. This research has discovered three major problems in the self-employment of rural inhabitants, which are, difficulties of registering their business, difficulties of getting loans from government and private sector, and insufficient infrastructure in the rural area. According to the sample data, 53% of the sample is not registered business and 47% is registered business. Using the five point Likert-scale, difficulties of getting loan from government and private sector is 80% of the sample and 53% of the sample indicates that infrastructure is not sufficient in rural area.

Conclusion

The results indicate that education, training and experience tend to be crucial for the success of self-employment among rural inhabitants. Savings from self-employment, number of family workers engaged in the business, education, experience, training and being a female self-employed are the main factors affecting high income earnings and that tend to make rural self-employment successful. This research has also discussed three major problems in rural self-employment; viz. difficulties in registering their business, difficulties of getting loans from government and private sector, and insufficient infrastructure in rural area. Therefore, the government and private sector should take necessary actions to supply sufficient infrastructure facilities like transport, communication, credit facilities and marketing facilities. Marketing facilities help to find suitable markets for their produce without any losses. Also the rural self-employed should be encouraged to produce more using their resources and should take action to distribute their production around the country. Further studies are needed to assess psychological and social factors that affect the success of rural self-employment.

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National and Over-national Policies in the Field of Education: A Case Study in Romania

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Keywords: *Education; Europenization; Lisbon Strategy; Bologna Process*

Introduction

Globalization has a great impact on our lives. Historically, globalization has been known specific regional variations. In Europe, the new concept refers to the so called "Europenization". Education contributes to the development of society, but it is also supported by the allocation of resources to reach as good parameters as possible, with individual and societal effects. It represents a preoccupation not only for the international global organizations (United Nations), but, also for the European institutions (The European Commission, The European Council, The European Parliament) and the national ones (government and parliament), involved in the educational process.

Education in the European Union is drawn under the principle of convergence, but significant differences are still noticed. Governance means not only national policies, but, also the European perspective (the European policy), with a strong connection between these two levels, to foster structural and economic homogeneity across the EU's countries, to assure a viable market integration. In these circumstances, it is a challenge to study how these two levels are linked, in order to assure a viable integration of the educational policy, and to get an economy based on knowledge.

Objectives

The paper aims to analyze the impact of the European policies on the national systems – with a focus on Romania – as a result of integration in the field of education. The main objectives of the study are: to highlight the Lisbon Strategy's consequences in Europe and the Bologna system's premises; to present the vision of Europe 2020 Strategy regarding education and to analyze the situation in the member-states, with a particular focus on Romania in achieving the Strategy's objectives; to identify the concrete actions to be made by all the levels involved in the implementation of the policy.

Methodology

To base a coherent strategy both at European and national level, it is important to know the current state of the problem. For that reason, the authors made a documentary research among secondary data from different studies regarding the European strategies and policies in the field of education, and official documents of the European Union for specific problems. The data and the documents were chosen based on their relevance for the paper, their impact in the education field and their importance as guiding documents for the European and national level. Also, some documents about national policies in the field of education in different EU member-states were consulted. Based on the correlation between national and European data a series of comparative analysis were made.

Results and Discussion

From the very beginning, The European Community was established as an over-national structure. The progress in the issues regarding integration emphasized this character. In December 2000, The Lisbon Strategy was launched, with the aim of transforming European Union to be the most competitive and dynamic economy in the world. The Lisbon Strategy was improved and relaunched in 2005 as The Lisbon Strategy for Growth and Jobs, with a focus on new domains, considered less relevant until that time: education, research and innovation. The Lisbon Strategy was correlated with

the Bologna Declaration (June, 1999) and it was followed by The Europe 2020 program. One of the five objectives of the program directly highlights education, and the program specifies not only the objectives, but, also, the instruments and the institutional aspects regarding the implementation. In the field of education, Europe 2020 established a concrete set of measures to reduce the school dropout to less than 10%; to increase the share of graduates in the tertiary graduates in the elderly to over 40% from 30%; and to invest in R&D 3% of their GDP. According to the official data, the situation in the member-states shows that some countries have some serious problems in achieving the requested indicators.

Comparing the situation in the member-states countries, the following aspects can be highlighted:

- Regarding the investments in R&D (established at 3%), 9 countries have less than the established target (Cyprus – 0.5%, Bulgaria – 0,78%, Czech Republic – 1%, Greece and Slovakia – 1,2%, Croatia – 1,4%, Latvia – 1,5%, Poland – 1,7%, Hungary – 1,8%); only Austria targeted more than 3% for R&D.
- Regarding dropping out, Bulgaria, Romania, Italy and Spain exceed the limit of 10%.
- Regarding the population completing the tertiary education, 10 countries established a target that represents less than 40%; other 10 countries are exceeding this target (Luxembourg and Italy more than 60%).

Conclusion

The European Union wants to build one of the most competitive economies in the world. In order to achieve this goal, it has created significant European/over-national strategies, which are correlated with the national policies. One of the stated goals in these strategies is focused on education, considering the fact that education is one of the tools requested for the sustainable development of EU. Romania, by joining EU in 2007, has to align its national policy in education to the EU's objective (including the requested Europe 2020 objectives). However, the indicators are not only unaccomplished, but, the targets are also lower than the requested ones.

These data must be analyzed in correlation with the national preoccupations regarding education. From the accession time, Romania faced a problem regarding education financing. The public educational system (that represents the majority in Romania) is financed from national and local level.There are some disparities between these two levels (in fact, the descentralisation process is still unaccomplished).

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Impact of Investments in Human Capital on Economic Growth: Time Series Analysis

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Keywords**:** *Human Capital; Economic Growth; Investments; Sri Lanka*

Introduction

The Impact of Human Capital on economic growth has always been a matter of discussion in the field of Economics. According to OECD "Human Capital is defined as the knowledge, skills, competencies and other attributes embodied in individuals acquired during their life and used to produce goods, services or ideas in market circumstances". The aggregate Human Capital of an Economy determined by national health and education standards. Over a long time of economic growth leading to improvements in human capital, better educated, healthy, innovative and creative workforce can help increase labor productivity in economic growth. There can be no significant economic growth in any country without adequate Human capital developed. In the Sri Lankan context there is a controversial discussion on the role of human capital in the economic growth process. Sri Lanka has achieved a higher level of education and health indicators relative to the other south Asian countries (HDI Reports 2014 – 2015). But there is a problematic situation regarding contribution of education and health sectors in economic growth of a Sri Lanka relative to the investments on both sectors. So far results of researches which was conducted on impact of human capital in economic growth is directly depend on variables and indicators they used in their research. Therefore it is necessary to examine the impact of Human Capital on economic growth of Sri Lanka consisting broader variables than before. This study examines the impact of human capital on economic growth in Sri Lanka after incorporating both health and education.

Oyedele (2014) has found a relationship between human capital and economic growth using Sargen test and GMM method in Nigeria. This research mainly focused on analysing the effect of human capital on economic growth. It concluded that policy makers should pay attention to both health and education sectors simultaneously. Further they emphasized that the government should increase their financing of both sectors. Conversly, Acroglu and Ada (2014) argued that government expenditure on human capital had no effect on economic growth. Also the results showed increasing quality of education and health sectors improving GDP by directly causing an acceleration of economic growth. Many works of research have been carried out in Sri Lanka on the impact of human capital on economic growth. However there is a limited literature on understanding the human capital contribution on economic growth considering both health and education simultaneously. According to that background this study is conducted to fill this research gap.

Objectives

The main objective of this study is to identify the effectiveness of investing simultaneously in both health and education as a human capital indicator for the achievement of Sri Lankan Economic growth.

Methodology

There is hardly to find any study on the effectiveness of the simultaneous investments in the human capital determinants for achievement the aim of economic growth of Sri Lanka. Therefore, this study attempts to provide a foundation to conduct an empirical analysis on the particular issue. This study uses time series analysis method to examine simultaneous investment in human capital determinants on economic growth in Sri Lanka during 1990 – 2015. To develop the model the Cobb – Douglas production function was used, which is a widely used production function to represent the technological relationship between the amounts of two or more inputs (particularly physical capital and labor) and the amount of output that can be produced by those inputs. The Cobb-Douglas function postulates a strong positive relationship between the growth of production and investment on human capital. In this study, in order to analyze the impact of simultaneous

investment in both health and education sectors, a new variable called Health Adjusted Education Index (HAEI) was calculated by taking enrollment rate at primary level and then multiplied the value with expenditure on health as percentage of GDP. This study employed Sri Lankan annual data from 1990 – 2015 and co – integration techniques in the analysis. Considering Health and Education variables as proxies for human capital following regression model was constructed.

$$ln\, GDPPC_t = \beta_\circ + \beta_1\, ln(HAEI)_t + \beta_2\, ln(CEXP)_t + \beta_3\, ln(REXP)_t + \beta_4\, ln(HDI)_t + \varepsilon_t \quad (1)$$

Where $GDPPC_t$ is the per capita gross domestic product, $(HAEI)_t$ is the health adjusted education index, $(CEXP)_t$ is the capital expenditure on the human capital, $(REXP)_t$ is recurrant expenditure on human capital, $(HDI)_t$ human development index and ε_t is the error term and the variables are relevant to Sri Lanka and secondary data were collected from World Human Development Reports and Central Bank reports. ADF and PP unit root tests are used to examine the stationarity of these variables. In order to identify the number of co- integrating relationships Johansson Co-integration technique is adopted. Granger causality test is employed to evaluate the causality or dynamic relationship between variables and vector error correction model (VECM) is used investigate the short run relationship of these variables.

Results and Discussion

According to the unit root test results, all two unit root tests confirmed that all variables are stationary at their first difference. According to lag length criteria based on FPE, AIC, and HQ criteria, 2 lags were selected. So lag length suggested 2 lags. Johansson co–integration rank test detected one co-integrating relation in the system of equations at 5% level of significance which implies that there is a long run relationship between variables. In order to identify the nature of the long run relationship Johanson Co- Integration Technique is adapted and long- run adjustment and short run relationship are examined using Vector Error Correction Model. According to the co-integrating results, the long run relationship between the variables is shown in Equation 2.

Long Run Relationship: From Co – integration Vector.

$$\ln GDPPC = -12 - 7.06\ln HDI + 2.29\ln HAEI + 0.95\ln CEXP - 3.35\ln REXP \quad (2)$$

As shown in Equation 2, mainly health adjusted education index (HAEI) and capital expenditure on human capital (CEXP) has a positive and significant impact on economic growth in long run. When capital expenditure on health and education increase by 1% Gross domestic per capita growth rate increase by 0.95% while other variables remain unchange. Also an increase in the health adjusted education index by 1% is associated with an increase of 2.29% in gdp capita growth rate in the long run. It is clear then that simultaneous investments in both health and education causes an increase in the economic growth of a country. All variables are significant in the long run when HAEI and CEXP positively impact on GDPPC and HDI, REXP negatively impact on GDPPC.

The negative and significant error correction term reveals that the model is stable in the long run. Gross domestic per capita growth rate moves back to equilibrium path and the disequilibrium error is corrected by 6% each year following an exogenous shock. The results do not explain the short run relationship between the variables significantly. According to the result the value of intercept is 0.138 which shows the gross domestic per capita growth rate value when the other variables are constant. There is no short run relationship defined between gross domestic per capita growth rate and the previous year's values of the other variables. Furthermore, the Granger causality test was used to test whether there is a causality relationship between variables. Results show that there is no causality relationship with the gross domestic per capita growth rate in Sri Lanka (Table 2).

Conclusion

The empirical results indicate that there is a positive and significant relationship between gross domestic per capita growth rate and health adjusted education index in the long run. It reveals the importance of investing in both education and health sectors simultaneously in order to achieve healthy economic growth. Results show that there is no relationship between human capital and gross domestic per capita growth rate in the short run. Because of that policy makers should turn to long run investment based policies to bring countries economy upto a decisired level. Also the results show that capital expenditure on human capital has a positive relationship when recurrent expenditure on human capital determinants have a negative relationship with gross domestic per capita growth rate. In order to

improving stock of human capital Sri Lanka should invest more on the capital expenditure of health and education sectors. Up to now Human capital was defined only based on education in Sri Lanka. But in order to achieving the goal of economic growth Sri Lanka should give priority to interactive benefits of the both health and education sectors.

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Does Education Decrease Corruption? Evidence from Sri Lanka

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***Keywords**: Education; Corruption; Rule of law; Regulatory Quality*

Introduction

A substantial amount of literature shows that higher levels of education and literacy are more likely to decrease corruption, and such literature clearly establishes the relationship between education and corruption from a global perspective (Charron and Rothstein, 2016; Truex, 2011; Anduiza et al. 2013; Caillier 2010). Though Sri Lanka has a high rate of literacy and participation in school education, there is still a high degree of corruption in public and political institutions (Transparency International -TI, 2014, 2016; Trust Survey Report, 2015). Thus, the research problem is: "Why does education have a positive impact on decreasing corruption[1] in some countries, not in others, in this case Sri Lanka?" Against this backdrop, this paper seeks to explain why the level of education seems to have a low level of impact in decreasing corruption in Sri Lanka using TI data over of the period of 1996 to 2016.

Our argument and the contribution of this paper is that, at the individual level, education can only have a positive effect on corruption when institutional quality is sufficiently high (anti-corruption bodies, law enforcement agencies, courts, other public institutions) and they uphold the key principles of quality of government such as impartiality, fairness, rule of law and effectiveness. Otherwise, the effect of education on corruption becomes negligible. This calls into question the view that simply increasing

[1] The Transparency International measures the corruption perception index from 0-10, which means that lower the value or score, the higher the corruption; whereas the higher the value, the lower the corruption.

the years of schooling and literacy and time spent in school are less likely to have a positive impact on decreasing corruption.

There is enough evidence to believe from the Northern European countries along with Singapore, Hong Kong, New Zealand and Australia that the higher the level of education, the lower the level of corruption. Some empirical studies demonstrate that more educated people show less accepting attitudes across the range of corrupt behaviors (Truex, 2011). The evidence from Nepal shows that more educated Nepalese are generally less accepting of corrupt behavior (Truex, 2011). Further, it has been argued that better educated citizens are more likely to complain to government authorities about the misconduct of officials which helps increase the quality of government operations and reduces corruption which in turn has a positive effect on social trust (Charron and Rothstein, 2016:60).

Objective

Based on the above empirical and theoretical evidence, we pose a simple question in this paper: "How far and to what extent does the level of education impact on decreasing corruption, and how do educated, well-informed and critical citizens react to a political system with low-quality institutions, a system with high levels of corruption?"

Methodology

This study employs annual data of Sri Lanka over the period 1996−2016. The variables and corruption equation in this paper is in the spirit of Asongu (2012) and the equation is given below:

$$\mathrm{CPI}_t = \pi_o + \pi_1 \mathrm{EDUI}_t + \sum_{\mathrm{j}=1}^{5} \delta_{\mathrm{j}} \mathrm{X}_{\mathrm{jt}} + u_t \qquad (1)$$

where, EDUI:education index[2], X: set of other regressors such as GDP growth rate (GDPGR), consumer price index (INF), trade openness(OPEN),

[2]We followed Asghar *et al.* (2012) and Vijesandiran and Vinayagathasan (2015) to calculate Education Index (EDUI), the formula is given by: $\mathrm{EDUI} = \left[\frac{2}{3} * \mathrm{ALI}\right] + \left[\frac{1}{3} * \mathrm{GEI}\right]$,
where, $\mathrm{ALI} = \frac{\mathrm{ALR}-0}{100-0}$ and $\mathrm{GEI} = \frac{\mathrm{CGER}-0}{100-0}$
ALI denotes Adult Literacy Index, GEI represents Gross Enrolment Index and CGER is the Combined Gross Enrolment Rate.

regulatory quality(RQ) and rule of law (ROL), CPI: corruption perception index[3], and u: white noise error term. As found in existing studies on corruption, we control for economic prosperity (in terms of GDPGR), trade openness and inflation. Data for CPI is collected from the Transparency International database; GDPGR, OPEN and INF were extracted from the World Bank's World Development Indicator database, whereas ROL and RQ were obtained from the World Governance Indicator database.

Auto Regressive Distributed Lag (ARDL) co-integration bound testing procedure developed by Pesaran et al. (2001) was employed to investigate the equation (1). Once we confirmed the co-integrating relationship between the variables via bound testing technique, then we adapted error correction version of the ARDL model to examine the short run relationship and long run adjustment between the variables. ADF and PP unit root test methods were used to test the order of integration of variables. Akaike Information Criterion (AIC) was adapted to determine the optimal lag length of each series.

Results and Discussion

Both ADF and PP unit root test technique confirmed that GDPGR is I(0) while all other variables are I(1). AIC advocated the use of ARDL (1, 1, 0, 1, 1, 1, 1) model to estimate the parameter. Bound testing approach confirmed that there is a co-integrating relationship between the variables since we reject the null hypothesis of no cointegration as test statistics are greater than critical value at 5% level of Significance (See the Table 1 below).

Table 1: Results of Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.378	10%	1.99	2.94
k	6	5%	2.27	3.28
		1%	2.88	3.99

[3]The corruption perception index (CPI) is an aggregation of perceived corruption levels.

Since we confirmed the cointegrating relationship between the variables through the Bounds test, we then estimated the long run relationship among the variables via the ARDL model, and the results are given in Table 2 below.

Table 2: Results of Long run Relationship

Variables	Coefficient	
EDUI	14.330**	(0.043)
GDPGR	0.0589**	(0.047)
INF	-0.0029	(0.734)
OPEN	0.0191	(0.168)
ROL	-0.0357**	(0.048)
RQ	0.0382***	(0.006)
C	-16.623	(0.054)

Note: Probability values are given in the parenthesis. *, **, *** indicate that variables are statistically significant at 10%, 5% and 1% level of significance respectively.

According to the results EDUI has a significant and positive impact on corruption, which implies that, in the case of Sri Lanka, when the level of education increases, it is more likely to increase the CPI, which is the indication for decreasing corruption. As expected by theory and most of the existing empirical studies (e.g., Charron and Rothstein, 2016; Truex, 2011; Anduiza et al. 2013; Caillier 2010), this finding demonstrates that a higher level of education helps to control corruption in Sri Lanka. Similarly, as theory and some of the existing empirical studies indicate, GDPGR tends to mitigate corruption in the long run (e.g., Asongu and Jellal, 2013; Asongu, 2013a, Asongu, 2013b). This study also indicates that although strict ROL principles are less likely to help reduce corruption, it is also evident that if the government upholds high quality in institutional regulation (RQ) it enables the government to control corruption. This shows that controlling corruption is closely linked with efficient and effective regulation of public institutions adhering to quality of government principles in which ROL plays a significant role. The message is very clear, that is, in developing countries, low regulatory quality opens up avenues for various forms of corruption and malpractices in public institutions than that of ROL.

However, inflation and trade openness do not have a statistically significant impact in decreasing corruption in the long run. Moreover, the selected ARDL model passes all the diagnostic testing such as normality of the error term, no heteroscedasticity, no serial correlation and no omitted variable(s) and also CUSUM test confirmed the stability of the selected model.

Table 3: Results of Short run Relationship and Long run Adjustment

Variables	Lag 0		Lag 1	
ΔCPI			-0.1727	(0.709)
ΔEDUI	10.091	(0.618)	4.6232	(0.687)
ΔGDPGR	0.0358	(0.343)		
ΔINF	0.0223	(0.470)	0.0011	(0.983)
ΔOPEN	-0.0055	(0.767)	0.0305*	(0.064)
ΔROL	-0.0086	(0.683)	-0.0076	(0.861)
ΔRQ	0.0114	(0.773)	0.0218	(0.151)
ECT(-1)	-0.0622	(0.183)		

Note: Probability values are given in the parenthesis. *, **, *** indicate that the variables are statistically significant at 10%, 5% and 1% level of significance respectively.

According to Table 3, as in theory and some of the existing empirical studies, EDUI, GDPGR, INF and RQ have a positive impact on CPI in the short run. That is, an increase in the level of education, GDP growth rate, inflation and high regulatory quality, are more likely to increase the corruption perception index which is the signal for low level of corruption. However, this impact is not statistically significant. Even though, ROL and OPEN affect the CPI negatively, the effect is not statistically significant. This could be because, when we take some measures to control corruption, it takes substantial time to provide results, and therefore, these regressors may not have a significant impact in controlling corruption in the short run.

Conclusion

The selected ARDL model passes the diagnostic test and the stability test. The results of the Wald test imply that there exists a co-integrating relationship between the variables under considered in this study. Thus, the higher the level of education, the more it supports fighting against corruption

in the long run, but not in the short run. GDPGR and RQ appear supportive in controlling corruption in the long run whereas GDPGR and RQ do not have a significant impact on corruption in the short run even though they are positively correlated with CPI as expected. OPEN and INF do not affect CPI significantly both in the long and short run. These findings imply the significance of maintaining high quality in regulating public institutions in line with the quality of government principles such as impartiality, fairness, rule of law and effectiveness. Further, it suggests the necessity of institutional reforms to ensure institutional quality at all levels, which is a precondition to decrease corruption, as the evidence shows in the case of less corrupt or non-corrupt countries. Further, this study addresses policy makers on how education and corruption are interrelated, and thereby advocates relevant policies and programs to control corruption through the educational system in the long run.

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Shedding a Light on Innovation: Traditional Medicine in Sri Lanka

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Keywords: *Innovation; Medicine; Biotechnology; Sri Lanka*

Introduction

Western medicine, with recent advances in biotechnology and advanced standards for proving efficacy of cure and safety of drugs, has become the mainstream pharmaceutical intervention in healthcare relegating traditional cures to a subaltern space. This sharp change in preferred method for medical care is evident in most South Asian countries. Most of these countries have had thriving practices of traditional medicines in the past. For instance, Ayurveda has long been practiced in India and Sri Lanka, Unani in the ancient Arab world, and Siddha medicines in the state Tamil Nadu of India[4].

A standard problem with traditional medicine is the yardstick of quality and efficacy of cure. Western medicine has employed institutions like clinical trials, standardization, patenting of therapeutic molecules, research establishing biochemical equivalents between patented and generic drugs to address this issue. The design of these institution help bypass or solve the problem of asymmetric information that exists between drug manufacturers on the one hand and medical practitioners and patients on the other. Though many of these institutions create additional problems (patent thickets and enhanced drug prices for patented cures), it is an undeniable fact that the absence of some of these institutions prevent appropriate dissemination of information about quality of herbal drugs and their curative properties. All pharmaceutical research, be it traditional or western, share or have some commonality in their discovery process. Traditional medicine, till recently, has shied away from standards established by western medicines regarding novelty (patents) or efficacy of cure (clinical trials) (Saha & Vasuprada,

[4]https://www.ayurtimes.com/siddha-system-medicine/

2018). The abundance of practitioners who have little scientific knowledge might have been the reason for the decline of the systems of traditional medicine. It is also becoming increasingly hard to distinguish between the quack and the real doctor in the latter discipline of medical cure at present. The decline could also possibly be due to the patient's preferences for the kind of treatment they want to go for. Glynn & Heymann (1985) find that western medicine is dominant due to the reasons that it exhibits efficacy of cure, places no dietary restrictions, and also that the government provides free treatment as opposed to Ayurvedic treatment. So, problems like fractures, mental illnesses among various others, lie in the realm of indigenous medical systems, whereas others which demand immediate action attract western medicine. In all, the demand and practice of traditional medicine is under the shadow of great doubt and hence looking at the status of research and innovation in traditional medicine becomes important to shed light on the process by which a dominant system of medicine becomes marginalized.

Objectives

The purpose of this paper is to investigate the status of research and innovation in traditional medicine (Ayurveda) in Sri Lanka. Understanding the nature of innovation in traditional medicine in Sri Lanka, where standard measures like patents or patent citations (commonly used for western medicine) are minimally present is not an easy task. Our objective is to empirically characterize the research network (through co-author connections) as this is the genesis of scientific innovation (Fleming (2001)). The statistical properties of the network help us infer the quality of research, innovation as well as support institutions supporting such activities.

Methodology

We adopt the combinatorial perspective on novelty in research (Saha & Vasuprada (2018) and Fleming (2001). The genesis of innovation for slow-moving traditional systems can effectively be tracked by our modeling of publications, authors and co-authors as elements of a strategic research network (refer to the citations network in Newman (2010)). The revealed preference of a researcher to co-author or publish with another researcher determines his or her relative ranking in the network which we capture using

statistical measures such as degree, betweenness, and closeness centrality. The ***empirical modelling of research network*** is calculated by in-built algorithms which come with *Gephi software*.

We use data on research papers on PubMed maintained by the US National library of Medicine and National Institutes of Health. It contains more than 28 million citations for biomedical literature from MEDLINE, life science journals, and online books. Using the keyword searches of 'Ayurveda in Sri Lanka' and as well as 'Ayurveda, Diabetes and Sri Lanka', we create the co-author network of research not only for all of Ayurveda but also for a particular disease (diabetes) to illustrate the properties of the network generally as well as in the particular (by disease). We list information on articles, authors, journals (national - Sri Lanka) versus international (rest of the world)), and the country of institution to which the author is affiliated. This data is then used in appropriate and coded format to plot the networks as well as to calculate the other network statistics. We filtered the results for the last five years thus covering the time period from 29th July 2013 to 30st July, 2018.

Results and Discussion

The network between coauthors researching Ayurveda overall and diabetes in particular in Sri Lanka has been plotted using *Gephi* which is an open source software for analyzing networks and is represented by Figures 1 and 2. The nodes have been color coded according to the nationality of the institutions to which authors are affiliated. The purple colored nodes represent authors with Sri Lankan nationality, the orange colored nodes represent authors with Indian nationality, the green colored nodes represent other foreign nationalities, and the blue ones are those that were not mentioned in the article. Figure 1 has 37 nodes and 78 edges while Figure 2 has 123 nodes and 260 edges. Node that edges are weighted to reflect multiple connections (thicker edges imply more connections between nodes).

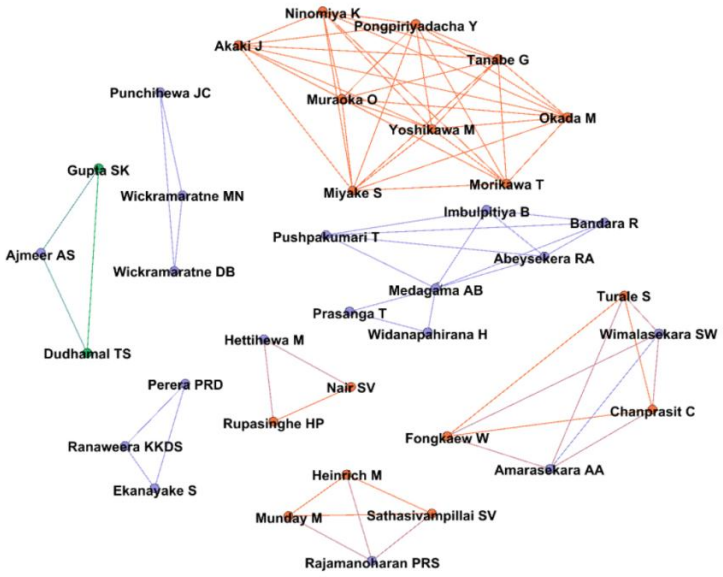

Figure 1: Co-author network of Ayurveda diabetes research in Sri Lanka

One can observe from the networks, there are separate clusters representing co-author collaboration. One can clearly identify that the connections are limited in the sense that most of the connections occur among Sri Lankans, and foreign authors mostly working among themselves. We rarely find Sri-Lankan and foreign authors collaborating across groups as opposed to working within the individual group clusters.

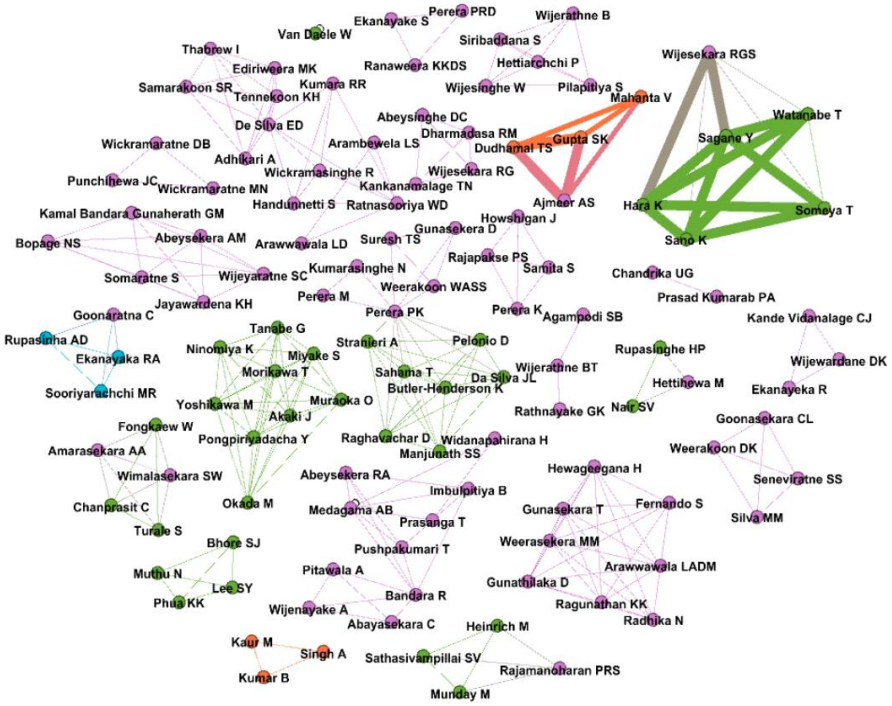

Figure 2: Co-author network of Ayurveda research in Sri Lanka

The following are the observed graph statistics such as degree and graph density, and subsequently, a description of the results.

Table 1 Degree and Graph Density of the networks

Research Network	Min Degree	Max Degree	Average Degree	Graph Density
Ayurveda diabetes research (Figure1)	1	8	4.22	0.117
Ayurveda research (Figure 2)	1	12	4.23	0.035
Source: Authors' own calculations				

Degree of the Network: As evident from Table 1, the average degree of the networks in figure 1 and 2 are almost the same. That is, on an average each node in the former coauthor network has approximately 4.22 connections which is almost equal to 4.23 connections for the latter network. Even though the maximum degree varies for the two networks, average degree for the two networks is almost the same. Drawing a parallel with Vasuprada & Saha (2018), we find that the overall research network in Sri Lanka has a higher average degree as compared to the average degree of the Ayurveda research network in India which is 1.5.

Graph Density: The graph density of the coauthor network of diabetes Ayurveda research is 0.117 and for the coauthor network of Ayurveda research is 0.035. These figures are low when compared to the graph density of a complete graph (in which every pair of nodes is connected by a unique edge) which equals 1.

Table 2: Top five nodes with the highest degree in the co-author network of Ayurveda diabetes research in Sri Lanka

Id	Label	Nationality	Degree	Closeness Centrality	Betweenness Centrality
	Medagama				
13	AB	Sri Lankan	8	1	8
2	Akaki J	Foreign	8	1	0
15	Morikawa T	Foreign	8	1	0
14	Miyake S	Foreign	8	1	0
19	Ninomiya K	Foreign	8	1	0

Source: Authors' own calculations

Betweenness and Closeness Centrality: For the networks in Figure 1 and 2, we represent the betweenness and closeness centrality of the top five nodes with the highest degree. We find many '0' values in the betweenness centrality column and many '1' values in the closeness centrality column because this centrality is calculated according to the disconnected components of the graph. This shows that the edge connectivity from one node to another does not always exist because of the myriad number of co-

author clusters (which are usually disconnected) that exist. This is a feature that is similar in the Indian context as discussed in Vasuprada & Saha (2018). The values other than 0 and 1 for both betweenness and closeness centrality measures are within cluster values of a particular node.

Table 3: Top five nodes with the highest degree in the coauthor network of Ayurveda research in Sri Lanka

Id	Label	Nationality	Degree	Closeness Centrality	Betweenness Centrality
65	Perera PK	Sri Lankan	12	1	41
19	De Silva ED	Sri Lankan	9	0.85	30
53	Medagama AB	Sri Lankan	8	0.75	14
7	Akaki J	Foreign	8	1	0
54	Miyake S	Foreign	8	1	0

Source: Authors' own calculations

General observation about this research network is its sparseness and inward-looking homophilistic (similar nationality authors researching together) character. Our measure of homophily is the nationality of the institute to which the author is affiliated, and we find that collaborations happen between authors belonging to the same nationality. The cross collaborations of authors across nationalities is a rare occurrence in the networks specific to Sri Lanka. We also noticed that University of Peradinya, Sri Lanka is the institution of affiliation of about 10 out of 37 authors in first network (Figure 1), and roughly 15 out of 123 authors in the second network (Figure 2). We notice from the search made on PUBMED that the journals in which the research specific to Sri Lanka is being published are mostly based outside Sri Lanka. The absence of domestic journals might have served as a deterrent to scholars in motivating or encouraging themselves to come up with novel research in Ayurveda as such.

Conclusion

Enhancing the strength of the research network requires policy measures that improve incentives for innovation. Though some recent measures have been undertaken by the government of Sri Lanka, most of them ensure standards for commodification of traditional herbs. The Sri Lankan UGC formed the Standing Committee on Indigenous Medicine at its 37th Meeting held on 04th

March 2013 for the enhancement of the Indigenous Medicine sector. This ranges from assisting policy dissemination to promoting research and formulating curriculum of traditional medicine courses[5]. National Drug Policy for Sri Lanka (2005) subsequently the National Medicines Regulatory Authority Act (Act No. 05 of 2015) was introduced, the objectives of which include ensuring the availability and affordability of safe and good quality, and efficient medicines relevant to the health care needs of the people in a sustainable and equitable manner, and so on[6]. However, we feel the establishment of quality research institutions with peer reviewed local journals encouraging collaborations with Sri Lankan peers with other researchers worldwide will aid the process alongside standardization measures taken up by the government.

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Economic Growth in Sri Lanka: Trade with SAARC or Trade with ASEAN

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Keywords: *ASEAN; Economic Growth; SAARC; Sri Lanka*

Introduction

Trade is generally identified as a key engine of economic growth and welfare. Therefore, countries around the world continuously attempt to develop trade relationships with each other. Sri Lanka has signed many of its trade agreements with other SAARC (South Asian Association for Regional Cooperation) countries. In addition to the South Asian Free Trade Agreement (SAFTA) and bilateral trade agreements with India and Pakistan, another FTA is expected to be signed with Bangladesh. Apart from its continuing interest in trading with SAARC countries, Sri Lanka is also exploring possibilities for trade beyond SAARC. In fact, the country is currently more interested in developing its bilateral trade relationships with ASEAN (Association of the Southeast Asian Nations) countries. Sri Lanka's first ever FTA with an ASEAN member was signed in January 2018, with Singapore. It is also planning to sign trade agreements with three other ASEAN countries which are Indonesia, Malaysia and Thailand. Hence, this paper aims to analyse whether it is trade with SAARC or trade with ASEAN which can promote economic growth in Sri Lanka.

Few studies have focused on the impact of trade with SAARC and ASEAN on economic growth in Sri Lanka. Almost all of those studies are descriptive and there is hardly any empirical study conducted on the particular issue. Most of the researchers recommend that under the current economic and political circumstances, trading with other countries is better for economic growth in Sri Lanka than trading with SAARC members. Bandara and Yu

(2001) find that unilateral liberalisation would benefit South Asian countries much more than preferential liberalisation. Weerakoon and Wijayasiri (2001) show that the technology, investment and trade needs of Sri Lanka are more closely aligned to those of its East Asian neighbours than to Bangladesh, Bhutan, Nepal or the Maldives. Ali and Talukder (2009) find that, with an insignificant share in world trade and persistent high levels of tariff barriers, the gains from free trade arrangements in the South Asian region are likely to be minimal. They highlight the possibility that small countries may lose and large countries may gain from an FTA in such a region. However, they emphasize the importance of exposure to a regional market for an economy in order to expand market size, gain economies of scale and increase the competitiveness of domestic firms.

Certain studies have emphasized that developing trade relationships with India is important for Sri Lanka to gain access to Southeast Asia. Weerakoon and Perera (2014) show that Sri Lanka can benefit from greater connectivity with South and Southeast Asia by pursuing closer economic integration with its neighbours. They argue that Sri Lanka should expand the current bilateral free trade agreement with India because many of the country's competitors in the Asian region have gained access to markets through such beneficial deals. Bhattacharyay (2014) also shows that integrating India - and through India other major South Asian economies such as Bangladesh, Pakistan, and Sri Lanka - to the South East Asian production network will create win-win situations for both regions. Through this, it is expected to reduce the excessive dependence of South Asia on advanced countries in the West. However, this leads to a new question whether the small countries in South Asia will then start to depend on India.

Objectives

Accordingly, the two objectives of this study are to analyse the growth contribution of SAARC-Sri Lanka trade and ASEAN-Sri Lanka trade, and thereby draw policy implications of the findings.

Methodology

There is hardly any empirical study on the growth contribution of trade with SAARC and ASEAN for Sri Lanka. Therefore, this study has attempted to provide a foundation to conduct an empirical analysis on the particular issue.

This study conducted a time series analysis on the impact of trade with SAARC and ASEAN on economic growth in Sri Lanka, during 1990-2016. In constructing the model, the Neo-classical growth accounting equation was used, which explains what part of growth in total output is due to growth in different factors of production. Neo-classical growth theory shows that the output of an economy is determined by three factors, which are capital, labour and technology. Considering trade as another determinant of economic growth, the following regression model was constructed.

$$\mathrm{LNGDP_t} = \beta_0 + \beta_1 \mathrm{LNGCF_t} + \beta_2\, \mathrm{LFPR_t} + \beta_3\, \mathrm{SAARC_t} + \beta_4\, \mathrm{ASEAN_t} + \varepsilon_t \quad (1)$$

where LNGDP is the log of real GDP, LNGCF is the log of real gross capital formation, LFPR is the labour force participation rate, SAARC is the log of total trade with SAARC (due to the lack of data, Bhutan and Nepal were excluded), ASEAN is the log of total trade with ASEAN (due to the lack of data, Brunei, Cambodia and Laos were excluded), ε is the error term and the subscript t indicates time. All the variables are relevant to Sri Lanka and secondary data were collected from two online databases which are World Development Indicators[7] and ARIC Integration Indicators[8].

Augmented Dickey Fuller and Philips Perron unit root tests were used to check whether the variables are stationary. Schwarz criterion was used as the model selection criterion. Auto Regressive Distributed Lag (ARDL) Bounds Testing approach was used to study the long run equilibrium relationship between variables. ARDL Error Correction Model was estimated to study the short run relationship between variables. The level of significance considered in the analysis is 5 percent. Diagnostic Tests were conducted to check whether the results are robust. The tests conducted are, Jarque-Bera test to

[7]Available at: http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators

[8]Available at: https://aric.adb.org/integrationindicators

check whether the residuals are normally distributed, Lagrange Multiplier (LM) test to detect serial correlation among residuals, Breusch-Pagan-Godfrey test to detect heteroscedasticity in the model, Ramsey RESET test to check whether the model is specified correctly. Cumulative Sum (CUSUM) test and Cumulative Sum Squares (CUSUMSQ) test to check the stability of the model.

Results and Discussion

After confirming that there is cointegration among variables in the model through the ARDL bounds test, ARDL long run and short run estimations were derived. Accordingly, trade with SAARC as well as with ASEAN has a positive and significant impact on the GDP of Sri Lanka in the long run. When trade with SAARC increases by 1 percent, the GDP of Sri Lanka increases by 13.6 percent, ceteris paribus. When trade with ASEAN increases by 1 percent, the GDP of Sri Lanka increases by 8.9 percent, ceteris paribus. However, in the short run, trade with SAARC has a negative impact on Sri Lanka's GDP. When trade with SAARC increases by 1 percent, GDP decreases by 2.3 percent in the short run, ceteris paribus. In the short run, trade with ASEAN has a positive impact on Sri Lanka's GDP only at 10 percent level of significance. Gross capital formation has a positive and significant impact on the GDP of Sri Lanka both in the long run and short run. However, labour force participation rate has no impact on the GDP of Sri Lanka either in the long run or short run. The Error Correction Term which is negative and significant shows that the model is stable in the long run and there is long run causality. GDP growth moves back to the equilibrium path and the disequilibrium error is corrected by 38% each year following an exogenous shock. All the diagnostic tests proved that there are no diagnostic errors in the model and that the results are robust.

According to the findings, trading with both SAARC and ASEAN promotes economic growth in Sri Lanka in the long run. It should be noted that in 2016, SAARC accounted for 10 percent of Sri Lanka's exports and 22 percent of the country's imports.[9] ASEAN accounted for only 3 percent of Sri Lanka's exports and 15 percent of the country's imports. However, Sri Lanka's trade with SAARC is mainly dominated by India. In 2016, India

[9] Source: ITC Trade Map. Available at: https://www.trademap.org

accounted for around 72 percent of Sri Lanka's exports to SAARC and 90 percent of its imports from SAARC. In fact, India is Sri Lanka's largest origin of imports after China. But Sri Lanka imports from Singapore, Malaysia, Thailand and Indonesia more than from any SAARC country except for India. Further, Bangladesh, Maldives and Singapore each accounts for around 1 percent of Sri Lanka's exports. Thus, India should have played a significant role behind the impact of trade with SAARC on economic growth in Sri Lanka. Among ASEAN countries, Singapore has the largest effect on Sri Lanka's trade.

Conclusion

This study followed Neoclassical growth theory in a time series analysis conducted to address the problem, 'which is better for economic growth in Sri Lanka, trade with SAARC or trade with ASEAN?, considering the period from 1990 to 2016. The main objectives of the study were to analyse the growth contribution of SAARC-Sri Lanka trade and ASEAN-Sri Lanka trade, and thereby draw policy implications of the findings. The results showed that both ways of trading promote economic growth in Sri Lanka in the long run. Therefore, Sri Lanka should expand its trade with countries in both regions in order to reap growth benefits in the long run. In fact, the country should improve its trade relationships with India and Singapore.

It is likely that trading with SAARC promotes economic growth in Sri Lanka, especially because of free trade agreements with India and Pakistan. However, although with no trade agreements signed during the period considered, trade with ASEAN has also contributed significantly to economic growth in Sri Lanka. Given that ASEAN is a region with some high income economies with a considerable population and exporting high technology products, this region can have more growth potential than SAARC. Therefore, it can be concluded that Sri Lanka's FTAs with ASEAN countries can be beneficial for the future economic growth in the country. However, policy makers should make sure that the prospective agreements are designed so as to give the maximum possible benefit to Sri Lanka.

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Impact of Terms of Trade on Economic Growth: Empirical Evidence from Sri Lanka

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Keywords: *Trade; Economic growth; Cointegration; ECM.*

Introduction

The terms of trade is used as an indicator of a country's economic condition. It is measured by domestic export price divided by the price of imports (Sherbourne, 2009). In the presence of world global integrations or disintegrations, where export prices converge or diverge worldwide, terms of trade have even more influence on economic growth (Wong, 2009; Blattman, Hwang & Williamson, 2003). An improvement of an economy's terms of trade is a result of a rise in the price of exports relative to the price of imports and a deterioration is induced by a rise of the price of imports relative to the price of exports over a given time period. Declining of terms of trade is one of the main reasons for an income gap between developed and developing countries. Increase in terms of trade would lead to increase in investment and thus economic growth will increase (Jawaid and Raza, 2012).

A number of studies have been extensively arguing the impact of terms of trade on economic growth. Most of them identified a positive effect (e.g. Jawaid and Raza 2012; Mputu 2016) while some of the studies reported an adverse effect (e.g., Kalumbu and Sheefeni 2014; Jebran et al 2018). This indicates that there is no consensus among the researchers regarding the relationship between terms of trade and economic growth. In sum, according to the existing literature, terms of trade plays a significant role in determining the growth. In this regard, although the government of Sri Lanka (SL) has made a tremendous effort to increase the terms of trade through the

implementation of favorable export and import policies since 1977, the amount of terms of trade in SL is still very low and has high fluctuations. Moreover, the impact of terms of trade on economic growth in Sri Lanka remains scantly researched in recent time and it is a widely debated issue. Thus, this study attempts to examine the influence of terms of trade on economic growth.

Objective

The main objective of this study is to examine the relationship between terms of trade and economic growth in Sri Lanka.

Methodology

This study follows the Prebisch-Singer Hypothsis (1950) and the model used by Jawaid and Raza (2012) and Mputu (2016) has been modified appropriately to construct an econometric model for this study by including exchange rate as a new variable, which is given in Equation (1):

$$Y_t = \alpha_0 + \alpha_1 INV_t + \alpha_2 LFPR_t + \alpha_3 TOT_t + \alpha_4 CPI_t + \alpha_5 ER_t + \varepsilon_t \quad (1)$$

where, Y_t: real GDP (dependent variable); INV: investment; LFPR: Labor Force Participation Rate; TOT: Terms of trade; CPI: Consumer Price Index; and ER: Exchange rate. ε_t is a white noise error term. We used annual time series data covering the period 1990-2016 for this study. All the series were extracted from annual reports of Central Bank of Sri Lanka and the World Development Indicator (WDI) data base.

In the first step of the estimation procedure of equation (1), Augmented Dicky-Fuller (ADF), Phillips Perron (PP) and Ng-Perron unit root tests were conducted to test the order of integration. Secondly, lag length selection criteria such as AIC, SIC, LR, FPE and HQIC were utilized to select the optimum lag length that can be included in the model. Thirdly, once we confirmed the order of integration, the co-integration test was conducted using Johansen approach to test for the existence of the number of cointegrating equations and long run relationship between variables in equation (1). Then, the Error Correction Model (ECM) was employed to test

the short-run relationship as well as long-run adjustment between variables using the following model:

$$\Delta Z_t = \alpha_0 + \Pi Z_{t-1} + \sum_{i=1}^{p-1} \Phi_i^* \Delta Z_{t-i} + u_t \qquad (2)$$

Where **Π** and the $\boldsymbol{\Phi}^*$ are functions of the Φ's. If $\Pi = 0$, then there is no cointegration, If Π has full rank, K, then the x's cannot be I(1) but are stationary and $\Pi = \alpha\beta'$, where, α is the (6×1) vector of speed of adjustment coefficient, β' is the (1×6) vector of cointegrating coefficients, $Z_t = [Y_t, INV_t, LFPR_t, TOT_t, CPI_t, ER_t]'$ vector of endogenous variables, Z_{t-i} is the lagged value of the variables, Z_{t-1} is the error correction term and u_t is the white noise error term. Finally, we adapted VEC Granger Causality/Block Exogeneity Wald Tests to check the causality relationship between the variables.

Results and Discussion

The unit root tests confirmed that all the variables are stationary at their first difference, suggesting that they are integrated in order one [I(1)] and All lag length selection criteria tests suggested the use of one lag as optimal lag length for this study. The trace statistics of Johansen co-integration technique identified three co-integrating equations at 5% level of significance. Thus, long-run relationship between the variables is given in Table 1 below:

Table 1: Results of Long run Relationship (Dep. Variable: Real GDP)

CPI	ER	TOT	LFPR	INV
-1.908048	2.121823	1.715826	-3.923052	0.823527
(25.6285)	(13.6697)	(15.5757)	(6.3787)	(6.0673)

Note: t values are given in parenthesis

The above table reveals that as expected by theory and some of the existing empirical literature, terms of trade (e.g., Jawaid and Raza 2012; Mputu 2016), investment (e.g., Mputu; Jebran et al 2018), and exchange rate (e.g., Kogid et al 2012) have a positive and statistically significant impact on real GDP while CPI affects real GDP negatively in the long run. Kasidi and Mwakanemela (2012) also identified similar findings regarding the impact of CPI on GDP. Further, Labor Force Participation Rate affects real GDP negatively in contrast to the theory and some of existing empirical studies

(e.g., Shahid 2014; Raleva 2014). An inefficient labor market and negative net-migration could be the reason for this negative effect. Table 2 below denotes the coefficients of speed of adjustment results from ECM:

Table 2: Results of the Speed of Adjustment Coefficients

	D(Y)	D(CPI)	D(ER)	D(TOT)	D(LFPR)	D(INV)
Coint Eq1	-0.5546 [-1.938]	0.0280 [0.174]	0.1145 [0.594]	-0.6696 [-1.308]	-0.0386 [-0.501]	0.4850 [3.587]

Note: t values are given in parenthesis

Negative and significant (at 10%) speed of adjustments (-0.554) coefficient of real GDP reveals that 55% disequilibrium is corrected each year which means that one period after exogenous shocks, real GDP moves backward towards long run steady state line with a speed of 55.4% in each period. Further, this study did not find any short run link and causality relationship between the variables[10].

Conclusion

The present study investigates the impact of terms of trade (TOT) on economic growth in Sri Lanka. The co-integration tests revealed a positive and significant relationship between TOT and economic growth, ER and real GDP, INV and real GDP with a negative and statistically significant relationship between LFPR and real GDP and CPI and real GDP in the long-run. However, there is no short run relationship and causality link between the variables under considered in this study. Also, the results show that there is an adjustment towards the steady state soon after the exogenous shocks with a speed of 55.4% in each period. So, policy makers should focus on diversifying Sri Lankan exports to ensure economic growth in the country.

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[10]Due to the page constraint, the result of short run relationship and causality relationships are not presented here but available upon request.

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Romania's Breast Cancer and Healthcare Education

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Keywords: *Cancer; Globalization; Health Systems; Inequalities*

Introduction

There is a wide variety of health systems around the world, with many organizational histories and structures as nations. By default, each country has to create and develop health systems according to its needs and resources, although common principles are found in almost all health systems. Since 2000, more and more initiatives have been taken at the international level to strengthen national sanitary systems. Given this scope, it is necessary to have a clear and unrestricted vision of national health systems that could generate new global health developments (Handler et al. 2001).

Globalization works with mechanisms that influence each other, such as market liberalization, integration policies and institutions, the emergence of new technologies and international rules (Eșanu 2012). At the theoretical level, each country has resources available if it is effectively prioritized. A study conducted by the European Commission in 2013 reveals that 73% of Romanians consider that the health services do not have the expected quality, while the average of those dissatisfied with the quality of medical services at the European Union level is 27%. Due to deficiencies of sanitary systems, it is important to focus on primary and family medicine, accessible to those with low and very low income (World Health Organization and the World Bank 2017). There are a variety of reasons why people's needs are not satisfied, such as: services have too high rates, the distance to the

unit/physician is too long (making them inaccessible), the waiting list is too long (appointments are hard to get).

Economic redistribution, as well as increased democratization of the processes associated with economic decision-making and the means of reproduction of social institutions, would lead to the development of the economy and health. The latter includes educational facilities, healthcare services and social services that could allow new generations to prevent serious or incurable diseases (Benatar et al. 2011). The health system in Romania has a very large gap compared to countries such as the Czech Republic, Poland, Greece, Bulgaria (EU Member States), but national development policies and strategies also aim at reducing this gap by: investing in the sanitary public system, implementing screening programs for incurable diseases, developing partnerships between private health clinics and EU health funds. Also, the importance of globalization could be seen through the development of partnerships between the national health system and other countries in order to treat Roman patients.

The death rate due to cancer in the European Union was 1,036 deaths per 100,000 inhabitants in 2015, with the highest death rates being Bulgaria (1,660 deaths per 100,000 inhabitants), followed by Romania (1,530 deaths per 100,000 inhabitants) (Eurostat 2018). In Romania, in 1995 there were 36,673 new cases of tumor-based illnesses, and in 2016 the number of new cases reached 98,856. In terms of tumor-based deaths, in 1995, 37,359 people died of oncological diseases, and in 2016 the number of deaths reached 51,803.

The research problem is the analysis of statistics about the Romanian health system compared to the international ones regarding population access to treatment, education, screening programmes, in order to identify some solutions for catching up with the globalization of health system. The originality of the research comes from the authors' idea to identify the situation of Romania in comparison with the European Union in terms of healthcare and breast cancer statistics. This comparison was made taking into consideration the fact that Romania is a developing country which needs worthy models in order to protect its population's health.

Objectives

The paper aims to present the statistics on the Romanian public and private healthcare system and how health access can be difficult for some parts of the population. The research objective is to analyse health inequalities (access to healthcare, income) and how the lack of health education affects the statistics of breast cancer in the case of Romanian women. The purpose of these analyzes is to see the opportunities of the Romanian health system offered by globalization.

Methodology

To achieve the objective, the authors conducted a descriptive marketing research in order to present the bond between globalization and the Romanian health system in terms of breast cancer statistics and inequalities in access of healthcare because of the migration of human resources and the lack of primary health in the entire country. The lack of health education can lead to much higher spending for the state budget, making it much easier to prevent than to treat. This study is based on secondary data analysis. The data used for the analysis are obtained from the Romanian National Institute of Statistics and from Eurostat (statistical office of the European Union).

Results and Discussion

In Romania, the evolution of the healthcare system is closely linked to medium and long-term economic development. Differences between areas in terms of the access and quality of healthcare services presents a gap that can only be recovered with well-established policies. The fragility of health system earnings has been seen as a response to economic, political and social changes and instability in recent years (Sen and Bonita 2011). Meanwhile, the private medical services market in Romania grows with about 10% per year and it was estimated in 2016 at over 700 million euro. In recent years, in Romania, the number of private health service providers has increased, largely due to the poor quality of public health services, outdated endowments, and equity of services. The public health system has a lot of gaps, not from the point of view of the physicians who provide services, but because of lack of a unitary health system.

According to Romanian National Institute of Statistics, at the end of 2016 there were 367 public hospitals, 187 private hospitals and 3 public hospitals with private areas. In 2007, there were 22 private hospitals in Romania, so their number increased more than eight times in ten years, while the number of public hospitals fell from 425 in 2007 to 366 in 2016. Romanians tend to choose a private hospital at the expense of a public hospital in the urban areas. The following chart is based on the Institute's data:

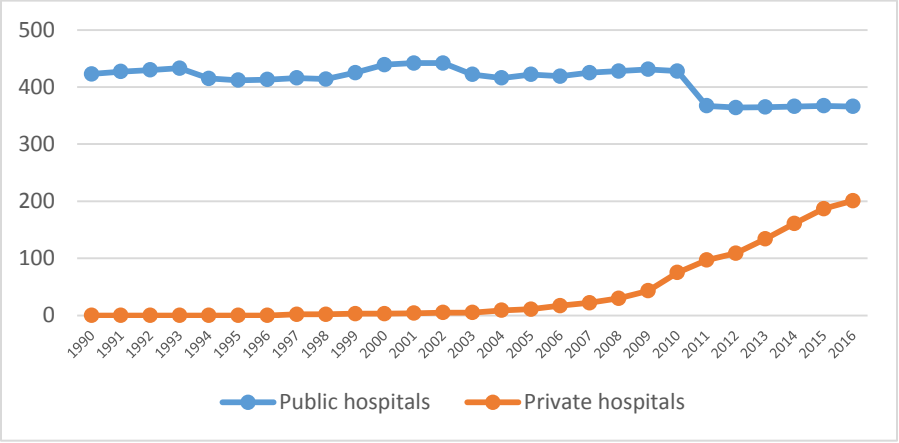
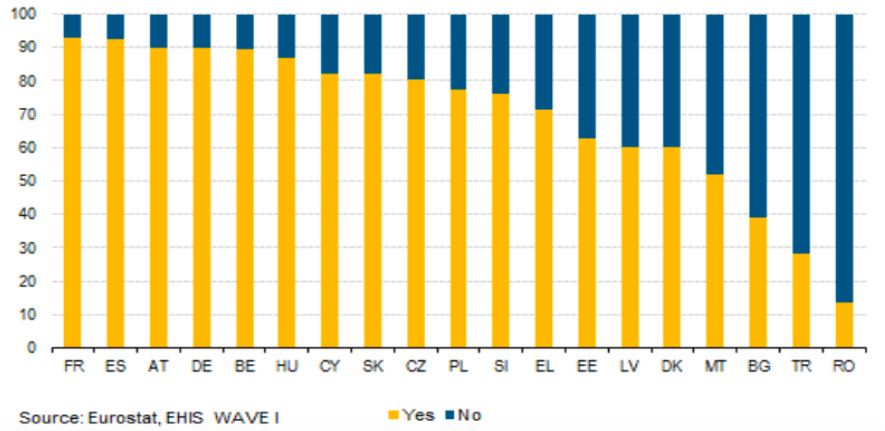


Figure 1: Hospitals in Romania, 1990-2015

The European Commission's Working Paper "Investing in Health" shows that the health of the population also affects economic prosperity (European Union, 2018)**.** Education has an essential role to play in preventing various diseases, and especially in understanding the strategies used to promote campaigns. Education includes components such as: patient education, school education, mass media, health communication (Nutbeam 2000). All these concepts are closely linked to globalization and adaptation to the highest standards of population health. In the last few years, public authorities have shown a growing concern to provide quality health services and the increase in health budgets has exacerbated the need for information and by default the research on the accessibility, quality and cost of providing good health services (Enăchescu 2007).

In fact, Romania is ranked the penultimate place in Europe as regards the percentage of the female population that has breast-controlled at least once in life and the last place in terms of the number of women who have performed

a test at least once in their life in order to prevent cervical cancer. The study conducted by the European Union in 2012 is still valid today because in 2018 Romania is among the last three EU member states that have not yet implemented a national breast cancer screening program (Figure 2).



Source: Eurostat

Figure 2: Breast cancer screening in European Union, 2012

The consequence is the mortality rate caused by this disease in Romania which is 36%, higher than the European average (29%). In Romania, in 2017, 21 new cases of breast cancer are detected daily, and breast cancer is the main cause of female mortality in Romania (at every 3 hours a woman dies from this disease). However, the big health problems faced in the whole world demonstrate that the state of healthcare concern is still at the beginning.

Conclusion

The research results show that Romania does not currently have policies and strategies geared towards the real evolution of the healthcare system. Globalization in the health field can have a positive influence on the reduction of cancer mortality rates, thanks to facilitating the exchange of information and best practices used globally. More than 9000 women are diagnosed with breast cancer annually in Romania, 33% of them are diagnosed in stage IV, when options therapies are minimal. Breast cancer in Romania is the oncological disease with the most victims among women.

Sanitary education can help to create patterns that can describe the symptoms that can lead to breast cancer, understand the importance of prevention and apply good practice in this field. All these efforts would help the country's evolution and then remove health gaps and help the country align with global health policies. Another key issue is the medical staff, globalization being a factor that has led to a migration of the necessary human resources (which is a reason of the difficult access to healthcare), due to the unsatisfactory incomes in Romania, as well as the difficult working conditions. In poorly developed or in developing countries, even if the population had access to medical services, they would not afford the medication needed to treat serious diseases such as cancer. In order not to get into that impasse, prevention and education are very important. The research results show that Romania has an urgent need to implement a breast cancer screening program. Such screening programs can lead to very important results and can help in decreasing the funds needed to treat a breast cancer discovered in the advanced stage, precisely by early detection.

In conclusion, globalization can be used to the advantage of health systems with the help of policies and strategies created by the profile of each country because targeted populations are not similar in terms of attitudes and behaviors.

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Risk Allocation in Frustrated Contracts: Building the Case for a New Sri Lankan Act

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Keywords: *Law; Contract; Frustration; Economics; Legislation*

Introduction

The freedom of contract allows parties to decide on the terms of a contract according to their own wishes. As a vitiating factor frustration of a contract is used as a method for terminating a contract. The Sri Lankan law governing doctrine of frustration is the Roman-Dutch law. However, as Judge Weeramantry observes (Weeramantry, 1967), with the evolvement of time both the common law and the civil law have come to similar terms with regard to their effect relating to the doctrine, and the distinctions that remain are purely theoretical. The judiciary has also been quite keen on adopting the more readily available English doctrines as a whole and it can be seen that the law now that governs the doctrine of frustration in practice is the English law.

The English law relating to frustration has changed from one of strict liability, where parties were held liable for their respective promises irrespective of events making performance not possible to a more liberal one, where parties were excused for events that resulted in non-performance, which were beyond their control, through developments in the common law. However, even with these changes in the common law it still yielded some unjust results which resulted in an imbalance of the risk allocation of frustrated contracts. The basic question then was to decide, who should bear the loss resulting from an event that has rendered performance by one party uneconomical (Posner and Rosenfield, 1977). To address these issues with the recommendations of the Law Commission the UK introduced The Law

Reform (Frustrated Contracts) Act, 1943, which dealt with allocating the risk of frustrated contracts on respective parties. The Act furnished the courts with the discretion to decide on the matters relating to the allocation of risks in particular circumstances. It primarily allowed the party proving frustration to get a discharge from their obligations while reserving discretionary powers with Court to decide on the just sum that could be allocated to the other party to the contract.

As it currently stands, the Sri Lankan law regarding frustration in practice is the English law (Weeramantry, 1967). However, since England has introduced an Act relating to frustration, our legal system is incapable of absorbing those statutory provisions, and the case law developed through those provisions. Therefore, according to the practices of our legal system we would have to rely on the case law that existed before the enactment of the English Act and hence we would have to rely on rejected and outdated precedents. The legal system should be equipped to take into consideration this lacuna in our legal system and a Sri Lankan Act relating to frustrated contracts should be enacted based on the English model as the English model has served as the basis for the Acts enacted in countries such as New Zealand, Australia and Canada on the issue of frustration.

Objective

The objective of this research is to suggest legal reform to an existing lacuna in the legal system regarding frustrated contracts. An Act regarding the allocation of risk regarding frustrated contracts based on the English model to enhance the efficacy of the exchange model is proposed as a way to reform the existing law.

Methodology

This is mainly a qualitative research based on a library research where primary sources of legislations and case laws are used and as secondary sources commentaries on the English Act and case laws are used.

Results and Discussion

The English Act was able to provide better solutions for two particular problems which the common law had created. Under section 1(2) of the Act all obligations that arose prior to the frustrating event were discharged and

anything paid was recoverable and anything to be paid ceased to be payable. This allocated the risk on the party which was not relying on frustration. However, the party alleging frustration was not able to take all and leave. The court was given a discretion to allocate some of the risk on the party relying on frustration by allowing the other party to take back incurred expenses prior to the frustrating event (Gamerco SA v ICM/Fair Warning Agency, [1995]). In this case it was held that the court is given a broad sense of discretion to do justice in a situation which the parties had neither contemplated nor provided for, and to mitigate the possible harshness of allowing all loss to lie where it has fallen. This provision is a proportionate way of balancing the allocation of risk and should be included in a Sri Lankan Act if one is to be made.

The other important provision in the UK Act is section 1(3) which again gives the court discretion as to give compensation for the party who has provided some kind of value to the other party before the discharge of the contract to have a *just sum* accordingly. This provision has given some difficulty in interpretation and as Lord Goff (BP Exploration Co (Libya) Ltd v Hunt (No 2), [1982]) has observed what matters is the end product and not the value of the work that had been already done. This interpretation, if one is to accept it as correct would undermine the whole rationale of the UK Act and would make it futile. For this reason, this observation has been severely criticized by the likes of Treitel (Treitel, 1994) and Mckendrick (Mckendrick 1995). It is observed that this provision should be utilized in a slightly modified manner in that the courts should be given discretion to order compensation on the party who had incurred expenses irrespective of a benefit being passed to the other party or not. However, this discretion should be of a limited nature than the one outlined under section 1(2) of the UK Act and should merit a proportionality approach. The discretion given should be used to serve justice to all and the relative losses of the parties should be proportionately allocated among them having regard to the context and nature of the case.

There have been many theories presented in regard to juristic basis underlining the doctrine of frustration and one basis on the implied term is now disregarded while the economic analysis has taken precedent. The *superior risk bearer's* theory advanced by Judge Posner which looks for the

party who could have better mitigated the situation may also provide a good basis for a risk allocation theory to be embedded in the proposed Sri Lankan Act on the matter. However, at times our courts have gone onto a more extravagant and dangerous basis of a just and reasonable solution theory (Eliyathamby v. Mirando, [1948]) and this theory has been disapproved by the English Courts. In addressing this, the proposed Act could be based on an economic analysis of the risk allocation relating to frustrated contracts which seems to provide a vibrant solution and a better theoretical basis out from the rest.

The research has also shown that most of the contracts themselves allocate the risks in relation to frustration through a *force majeure* clause. By including a *force majeure* clause, the parties themselves decide on the proper allocation of risk relating to a discharge of the contract through a frustrated event. The contracting parties find this much more economical and efficient than to contest the effects of frustration in a court of law. This gives the opportunity for the parties to a contract to decide upon the allocation of the risk according to their own capabilities which is the best suited solution for the exchange model which always tries to create a surplus through the exchange.

The part played by market insurance has to be taken into consideration as well. However, it must be remembered that market insurance comes at a price and may not be suitable for all circumstances. However, it is further observed that though the parties may themselves assign the risk of a failure to perform their part of the obligation since the bargaining powers are never equal this inequality will create a problem for an optimum risk allocating mechanism. Further, where a *force majeure* clause is vague or ambiguous, frustration will be applicable. Therefore, the courts must be given the opportunity to intervene in appropriate circumstances to make the exchange model work. Here again the discretionary natures of the power given to the courts will be of vital importance. It should neither be too loose nor strict and should be capable of accommodating the evolutionary nature of the society.

Conclusion

Introducing an Act for Sri Lanka relating to the allocation of risk with regard to frustrated contracts would help to fill in the gaps that exist in the legal

system regarding frustrate contracts. Though *force majeure* clauses and insurance has significantly contributed to the allocation of risk relating to frustrated contracts judicial intervention has not been significantly reduced as a result in deciding on the fairness of the risk allocation. Therefore, it would be a feasible idea to have a modified version of the English Act in Sri Lanka to aid the judiciary to allocate the risk at an optimum level regarding frustrated contracts. It is to be recognized that risk-bearing is a perpetual question of business activity, and that frustration is a device for addressing it and we can address it better with a statutory enactment to that effect.

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Evolution of Caste and Class Dynamics in India during Economic Growth in the Post-Reform Period

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Keywords: *Caste; Class; Economic Growth; Mobility*

Introduction

Among various dimensions of inequalities and exclusion such as gender, religion, region, race and ethnicity, caste and class continue to be the two most important components of the stratification debate in India (Deshpande, 2000; Thorat, 2013; Patankar, 2015; Bhowmik, 1992). There is a vast literature that highlights the central role that caste and class play in fostering and sustaining the process of social exclusion of a major section of the population in the economic, political and cultural spheres (Nayak, 2012; Patankar, 2015; Thorat, 2013; Vakulabharanam 2010).

The Indian economy has experienced rapid growth since the 1990s; a rapid, and to large extent sustained growth for most years since the late 1980s. The literature has discussed two contradictory views about the evolution of caste and class dynamics during the decades of high growth. On one hand, the benign view suggests that the process of liberalization and economic growth has been able to create an inclusive socio-economic environment where caste boundaries and class hierarchies have been diluted (Hnatkovska, 2011; Panini, 1996; Hnatkovska et al, 2012). However, in contrast to this benign view, there exists a voluminous literature that argues that the overall growth process has been exclusionary and inequalizing, i.e., some sections of the society have been able to reap the benefits of economic growth and advancement while some have been kept out of its purview. The SC's and ST's still have low socio-economic indicators and there has been persistent inter-group inequality in terms of income and consumption, as well as in

terms of access to education, healthcare, and better employment opportunities (Baru et al, 2010; Deshpande, 2000; Thorat and Mahamalik, 2006; Deshpande, 2008; Madheswaran and Attewall, 2007; Nambissan, 1996).

On the other hand, there are a number of studies in the literature that have discussed the existence of class based inequalities in India. Using an "occupation based" class-schema specifically designed for the Indian case, these studies suggest that there is significant inequality of opportunity in India. There is also considerable intergenerational persistence, especially in low skilled and low paying jobs. It has also been suggested that caste plays a significant role in determining the patterns of social mobility. Occupational mobility is lower for depressed castes as compared to upper castes. There has been a persistence of the fact that very few lower caste people are to be found in the high status jobs at the top of occupational hierarchy compared to the upper castes (Kumar, Heath and Heath, 2002; Vakulabharanam, 2010; Motiram and Singh, 2012; Kumar, Heath and Heath, 2002a)[11].

Some studies have suggested using the "intersectionality" framework to analyse the inter-connection or association between caste and class (Bhowmik, 1992; Kumar, 2010). However, in economics, there has been no explicit empirical work in terms of caste and class employing the intersectionality framework. Though there have been few empirical studies that try to analyse the caste-class relationship and the change in their interaction over time, they mainly provide evidence of the condition or status of caste-class relationship during their period of analysis. The literature fails to address the underlying mechanisms that result in persisting caste and class based inequalities or are the driving force behind the observed patterns of change. Since caste origins have been historically tied to specific occupations, these studies mainly use an "occupation-based class schema" to determine the intergenerational mobility patterns. They however do not take into account other dimensions of caste and class that shape the socio-

[11]Broadly, in these studies the classes are divided into four categories namely: salariat (consisting of executives, managers, and professionals), business class (classified into business and petty business), manual labour (consisting of skilled/semi-skilled and unskilled labour) and agriculturalists (consisting of owner cultivators, tenant cultivators, and agricultural labourers). Though this class schema is not completely hierarchical in nature, one can place salariat and business class at the top of the ladder, whereas unskilled manual labourers and lower agriculturalists can be placed at the bottom. (For detailed discussion refer to Kumar, Heath and Heath, 2002a).

economic "status" and social experiences of people belonging to specific caste groups and class origins.

Objective

The objective of this study is to examine the empirical association between caste and class in times of economic growth. It also tries to enquire into the nature of the relationship between these two, i.e., to see if caste and class are just two inter-dependent forces or they mutually reinforce each other. This analysis then seeks to understand the importance of caste and class origins and their "interaction" in determining the social mobility patterns in India in the most recent times of growth. In an attempt to understand the above dynamics, this study tries to address the following question: Does the prevailing caste/class hierarchies necessarily imply that an individual of a particular caste group will always end up in a specific class position, with a specific set of opportunities, choices, and economic life chances? Or during the recent period of high economic growth the relationship between caste and class and their role in determining the life chances of the individual has been diluted?

Methodology

The analysis concentrates on the period 1999-2012 (the most recent decade of high economic growth), given that this period is covered by the comprehensive, disaggregated household level data from National Sample Survey Organisation (NSSO), comprising of the following four rounds – 55^{th} round (1999-2000), 61^{st} round (2004-2005), 66^{th} round (2009-2010), and 68^{th} round (2011-2012). The data set used for the study is not a panel. It is an independently pooled crossection data for four time points. In order to convert the nominal values into real values, the consumer price index (CPI) for the year 2006 of rural workers has been used in the rural areas and that of industrial workers has been used in the urban areas.

To define caste, the generally accepted contemporary caste classification by the Government of India has been used, where the population is divided into four broad groups: Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Classes (OBC), and General or Forward Castes. Class, on the other hand, has been defined in various ways in different strands of literature.

Here, following the tradition of classical political economy (i.e., in the tradition of Smith, Malthus, Ricardo, and Mill, and their critique by Marx), I define class in a specific way – in terms of the position of an individual or a group of individuals within the process of production, appropriation and distribution of value added in the economy. In the urban sector classes can be broadly divided into the following four categories: self-employed (those who control the process of production, are involved in the actual labour and also are the recipients/claimants of their final produce), workers (those who actually perform the physical labour but cannot claim the final produce), professionals and managers (who perform a supervisory role in the labour process) and non-class/non-economic (those who are not involved in any economic activity as well as are not actively available for work such as students, pensioners, rentiers, disabled, remittance recipients etc.). There are intrinsic differences between people working in the manufacturing and services sector. Once this distinction is accounted for, the class of self-employed can be further divided into six sub classes namely own account worker in manufacturing and own account worker in services, employer in manufacturing and employer in services, and unpaid family worker in manufacturing and unpaid family worker in services. The working class can be divided into two composite classes, namely regular and casual workers in manufacturing and regular and casual workers in services. Thus, in the urban sector the detailed classification consists of 10 class positions.

The rural sector is first categorised into agriculture and non-agriculture at the broadest level. The agriculture sector can be further split into two broad categories namely the landed and the landless. Based on the amount of land owned, the landed category can be further subdivided into four classes- rich farmer, middle farmer, small farmer and marginal farmer/tenant. These four groups together constitute the faming/peasant class. Those who are landless but still work in agriculture, as they primarily derive their livelihood from it, are referred to as agricultural workers. The non-agricultural sector consists of non-agricultural workers, the rural professionals (e.g. government officials) and the non-agriculture self-employed. As in the urban areas, a section of the rural population falls into the non-class/non-economic category. The agricultural workers and the non-agricultural workers together comprise of the working class. The non-agriculture self-employed class can be further

subdivided into six categories (as discussed above). Thus, the detailed classification in the rural sector comprises of 14 class positions.

The above mentioned classes are defined using information about household characteristics, usual principal activity, particulars of the individual members of the household, occupational data obtained from National Classification of Occupations (NCO-2004) and the industrial classification codes obtained from National Industrial Classification (NIC-2004).

In order to track the evolution of the interdependence of caste and class over time, regression analysis has been used. Since caste and class both are categorical variables, a multinomial logit framework has been employed where class is the dependent variable and caste is one of the explanatory variables. It is important to note that the focus of the analysis is not to use economic growth as an explanatory variable, since growth doesn't impact the caste identity[12] and class position of an individual, and is also not impacted by them. However, it has been argued in the literature that there has been an expectation or hope that rapid growth and process of economic liberalization and modernisation may lead to dilution of the rigid caste boundaries and class hierarchies, thereby resulting in an improvement in the socio-economic outcomes of the depressed and excluded sections of the society (Hnatkovska et.al, 2012; Vaid, 2012). Hence, in the analysis, the attempt is to capture the caste and class dynamics by analysing the period which is the most recent decade of high economic growth.

A whole host of factors which might influence the class position of an individual have been controlled for. These include education, gender, monthly per capita expenditure (mpce), and state, which captures whether an individual resides in a less advanced (backward) or a developed state. All these variables are categorical in nature, except for mpce which is a continuous variable. First, a regression with explained set of controls is carried out which describes how the changes in each of these variables are affecting the class position of the individual. However, in order to capture the impact of caste over time, an interaction term has been added in the second regression.

[12]An individual is born into a particular caste group with a set of ascribed characteristics.

Results and Discussion

The multinomial logit estimation seeks to explain the relative probability of an individual ending up in a particular class position given his caste and attributes set. Labour and regular or casual workers (which represent the working class) serve as the base category in the rural and urban areas respectively. The coefficients of the multinomial logit model obtained from the analysis are significant and have the expected signs. The relative probability of SC's and OBC's belonging to the peasant class than in the labour class is 76% and 28% lower as compared to general category (controlling for all the other variables). Over the entire period of analysis the relative probability of an individual belonging to the peasant class rather than being in the working class has gone up by approximately 11% in the rural areas. The relative odds of being rural professionals or self-employed in non-agriculture sector rather than working as labour are much lower for ST's, SC's and OBC's relative to Others. Specifically, the relative odds of ST's and SC's being self-employed than working as labour are about 75% and 59% lower as compared to Others. However, the probability of SC's being rural professionals than working as labour in 2011-12 relative to general category in 1999-2000 has increased by approximately 32%. This effect is captured by the interaction term. In the urban areas as well there is a similar trend. The relative probability of ST's, SC's and OBC's being professionals or self-employed than being regular or casual worker is much lower as compared to Others (after controlling for all the other variables). The probability of ST's and SC's being self-employed than being regular or casual workers in 2011-12 relative to Others in 1999-2000 has decreased by 40% and 18% respectively[13].

Conclusion

Caste and class continue to be two major components of economic and social stratification in India. They play a crucial role in strengthening and sustaining the process of social exclusion. Though there have been some improvements over the period of analysis in terms of movement across class positions, caste still appears to be influential in determining an individual's class position. Although there has been some dilution of the caste and class

[13]Detailed results are available in the longer version of the paper.

hierarchies during this period of high economic growth, the change has not been significant enough as had been hoped. Both the rural and urban areas have witnessed similar trends but the magnitude of the change is very different. Policies formulated need to take into account the differences in the rural and urban areas.

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Essential Values of Subjective Well-Being for the Development of a Sustainable Society: Romanian Experience

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Keywords: *Well-being; Sustainable Society; Values; Marketing Research*

Introduction

This paper includes an analysis of Romanian students' opinions regarding the main values associated with the subjective well-being concept. A deeper understanding of subjective well-being among the young Romanian population leads to the development of a more sustainable society where individuals, organisations and policy makers are able to make better decisions. The Organization for Economic Cooperation and Development (OECD) (2015) measures subjective well-being considering: material condition (income and wealth, jobs and earnings, work-life balance, housing, environmental quality) and quality of life (health status, education and skills, social connections and personal security). Well-being is tightly connected to the concept of sustainability. In measuring a country's sustainability, the Sustainable Society Index is based on human, environmental and economic well-being (Sustainable Society Foundations, 2012). The sustainability of well-being is reflected in the need to preserve four types of capital: natural, human, social and economic (OECD, 2015). The research on youth well-being is quite limited and the authors considered it essential to conduct a more in-depth analysis about this age group. Inside the European Union, Romania has one of the highest percentages of young people willing to emigrate for improving their quality of life - 30% (Sandu et al., 2014). The research results are valuable by adding to the international framework the

perspective of the young population from Romania, a South-Eastern European country with a different approach of the topic from other countries. The research problem is to understand the meaning of subjective well-being for these students, to identify the most cherished values and to analyse if there is a different perception between males and females regarding this matter.

Objectives

The aim of this paper is to present the results of a survey which quantifies the Romanian students' opinions about the most important values of subjective well-being and their role for creating a sustainable society.

Methodology

To achieve the objective, the authors conducted a quantitative marketing research involving 1122 students (aged 18-35) from 10 Romanian universities. The authors collected the data during December 2016 and January 2017 using an online questionnaire. The sample was built using multistage sampling based on geographical area, university size, faculty profile and the study level. So, inside the sample 55% of respondents are Bachelor's students, 35% - Master's students and 10% - PhD Students. The sample structure includes 68.5% females and 31.5% males. The research variables were selected based on several studies which identified the factors that substantiate the well-being of the young generation; satisfaction regarding personal fulfilment, interpersonal relationships at job and during their free time, finding a sense in life and happiness, health, education, social relationships and environment, finding a stable job and professional satisfaction (Fabbrizzi et al, 2016). The data collected was analysed using the statistical software SPSS 17.

Results and Discussion

Inside this study, the Romanian students were asked to rank 10 values associated with the well-being concept. Overall, the students have mentioned happiness as being the most important value of subjective well-being

followed by freedom and outdoor activities. An analysis by gender shows that there is a difference of perspective. The females ranked the values exactly as mentioned above – happiness, freedom and outdoor activities. The males made a different ranking: personal income, hapiness, freedom. One explanation could be the desire of men to support their family, bringing material wealth.

Table 1. The ranking for subjective well-being values

Rank	Values by respondents	Values by females	Values by males
1	Happiness	Happiness	Personal income
2	Freedom	Freedom	Happiness
3	Free time outdoors	Free time outdoors	Freedom
4	Efficiency	Efficiency	Free time outdoors
5	Personal income	Personal income	Efficiency
6	Cooperation	Cooperation	Cooperation
7	Progress	Progress	Competition
8	Competition	Altruism	Progress
9	Altruism	Competition	Consumption
10	Consumption	Consumption	Altruism

Further, the sources of happiness were identified in this study. The majority of the respondents mentioned family as being the major source of happiness. In second place, males mentioned personal income, compared to females who chose career. In third place both males and females mentioned their friends as being an important well-being value. Young people under the age of 25 need friends with the same concerns to provide mutual support. The study results show that *freedom* is a well-being value which also generates happiness. The meaning of freedom is shown in Table 2.

A person considers herself free when he can take action according to his desires or in the absence of constraints. The study's results in the table below show that the freedom of decision is the first sense given to freedom by 46.1% of males and 49% of females. Freedom of speech is the second meaning of freedom cherished by 16.9% males and 24.6% females.

Table 2: The meaning of freedom by gender

Meaning of freedom	All respondents	Males	Females
Freedom of decisions (%)	47.8	46.1	49
Freedom of speech (%)	21.6	16.9	24.6
Flexible program (%)	6.6	7.6	5.9
Free movement (%)	5.2	2.5	6.9
Financial independence (%)	2	1.9	2.1
Other (free conscience, access to information) (%)	4.1	2.3	25.1
I do not know (%)	12.5	13.2	12.1

Source: Authors' Calculation

The third important subjective well-being value mentioned by respondents is the time spent on *outdoor activities.* The results of the study show that students spend an average of 10.37 hours per week in nature (Table 3).

Table 3: Average of hours spent outdoors by age group

Age group	Subsample size	Average of hours spent outdoors	Maximum hours spent outdoors
18 – 21	470	11.24	75
22 – 25	560	9.11	48
26 -35	92	13.63	55
Total	1122	10.37	75

Source: Authors' Calculation

The analysis of age groups shows that although it would be expected for younger students to spend more time outdoors (due to the fact they have more free time), the results show something different. The students aged 26-35 are those who spend the highest amount of hours outdoor – an average of 13.63 hours/week.

Conclusion

The youth population represent a valuable resource for each country's development and Romanian institutions need to make an effort in order to create a safe and promising environment. Considering the high percentage of

youth willing to leave the country for a better life (30%) and the most important well-being values resulting from this study, the authors suppose that the Romanian young generation is not satisfied with the level of happiness and freedom and the amount of free time spent on outdoor activities. Based on this study results, all the responsible parties could apply measures in order to encourage the young generation to remain in the country. Through such analyses, the government could achieve a better understanding of how to use the resources on activities and policies which provide the biggest well-being benefits for citizens (Cloutier et al, 2013). If youth are given more opportunities to have a meaningful experience they would be more likely to remain inside the country building a sustainable society. Romanian institutions should create long term strategies for supporting this generation because its current well-being will influence the future well-being of an entire nation.

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Minimizing the Transportation Cost of Dambulla Economic Centre: Integration of Process Planning and Scheduling on a Web Base Platform

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Keywords: *Vehicle; Linear Programming; Transportation; Cost*

The government of Sri Lanka established economic centres in provinces according to the budget proposals in the year 1998. The Dambulla Economic Centre was the first and was established on the 01st of April 1999. Thereafter, a number of economic centres were established throughout the island. But Dambulla Main Hub remained the central warehouse of vegetables in the island. This paper deals with a vehicle scheduling problem in transportation and investigates a solution to overcome the problem using linear programming (LP).

Marketing Department Logistics (MDL) Ltd needs to distribute vegetables and fruits to different provinces. Its main hub is situated near the Dambulla vegetable and fruit market, and minor hubs are situated in different provinces in Sri Lanka. The main objective of this research is building a cost minimization model to create a suitable method for delivering of vegetables and fruits from the Dambulla major hub through its minor hubs to the outlets in the provinces. Hence, to optimize the cost of outbound distribution, a mathematical model has been developed by using Integer Linear Programming using reliable sources to collect data. Software assistance was obtained using the Lingo 06 optimizer, Java, Ms Access and Ms Excel tools to solve this mathematical model. This study is based on the Dambulla economic centre. This is an initial step to bring a correct protocol to arrange a transport model to distribute the vegetables and fruits from this centre in a cost-effective way. According this study all districts in Sri Lanka could be divided into four clusters.

At the beginning of this research we assumed that each district contains two warehouses and three vendors. This model is flexible enough to re-schedule

for any given request. It helps to create a larger model for solving any type of transportation planning problem.

Objectives

- Using the Mathematical Method of Hamiltonian Cycle to find Optimal Cost Benefit Major Paths to delivering vegetables and fruits from the Dambulla major hub to each warehouse in every district in Sri Lanka.

- Build a Computer Web Based system which delineates the manner of delivering all vegetables and fruits to all vendors from all warehouses in Sri Lanka.

Methodology

This section explains the methods which are used to find the exact location of the new facility, to find an intelligent route plan with truck allocation while maintaining the same service levels of the Dambulla economic centre. These methods will bring quantitative results to achieve objectives and it introduces cost optimized truck allocation. Lingo is a comprehensive tool that can identify Linear, Nonlinear, Stochastic, Integer optimization etc. It reads formulation and automatically selects the appropriate one. Therefore, there is no need to specify or separate the solver. The Lingo User Manual describes all commands and features in an understandable language. Thereby this software selection is justified as an effective tool for this research model. The integer linear programming model which is developed in this research has variables which are assumed to be discrete values classified as integers. Basically, by this research, an attempt is made to minimize the transportation cost of delivering vegetables and fruits to different provinces. Thereafter, the transportation cost of delivering vegetables and fruits to small supermarkets or shops will be minimised. Further, it is expected to introduce some web based interface to certain selected responsible persons in all districts to insert the demanded requirements of each district. Thereafter, a person who operates this database will find out the transport schedule of the country and insert it into the data base. Thus, the selected responsible person has access to the web based system and can see the transport schedule.

Results and Discussion

This research is based on building a cost optimization model which derives a suitable method for delivering of vegetables and fruits from its Dambulla major hub through its minor hubs to its outlets in the provinces. The final goal of this research is to build an Internet Based System to solve this mathematical problem. However in order to satisfy these major points LINGO 06 solver was used in two locations.Advanced analysis was carried out under the following tasks.

Task 1 : All districts of Sri Lanka were divided into four groups

I. Cluster 1 II. Cluster 2 III. Cluster 3 IV. Cluster 4

Table 1: Details of Clusters

Index	Region	Contained district
1	Cluster 1	Anuradhapura, Vavniya,Mannar, Jaffna,Kilinochchi, Mulaitivu, Trincomalee
2	Cluster 2	Puttalam, Kurunegala, Kegalle, Colombo, Gampaha, Kalutara, Rathnapura, Galle, Matara
3	Cluster 3	Matale,Kandy, Badulla,Monaragala, Hambanthota, Nuwara Eliya
4	Cluster 4	Polonnaruwa, Batticaloa,Ampara

Source: Results of the research

Task 2: Each district contains two warehouses and three vendors. A vendor represents ten supermarkets in a certain area. Locations of the warehouses and distances will be applied to the model accordingly.

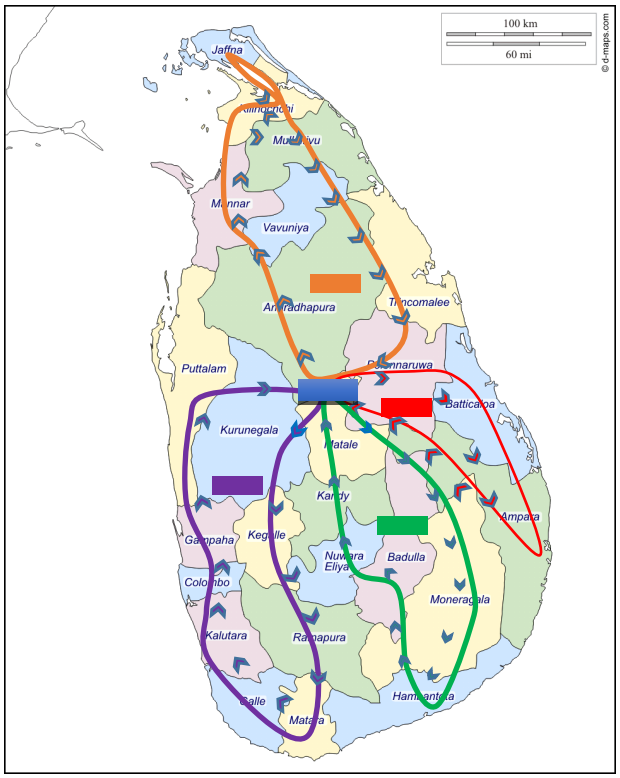
Example: Warehouses and Vendors

Colombo district: Colombo warehouse 1, Colombo warehouse 2

Colombo district: Colombo Vendor 1, Colombo vendor 2, Colombo Vendor 3

Task 3: Under this task, the Hamiltonian cycle is used to find the major paths of each cluster to deliver vegetables and fruits from Dambulla Major Hub to each warehouse in every district in Sri Lanka.

Figure 2: Hamiltonian Path of Each Cluster



Source: Results of the Research

Task 4 : During this step, Excel, Access and Java software were used to build a computer based system which delineates the manner of delivering all vegetables and fruits to each vendor from all warehouses in Sri Lanka.

Route Analysis - Hamiltonian Cycle: The first step of the research is to find a route plan where the optimal path is performed using the Lingo software. Lingo is a software package which facilitates the solution of linear and non-linear optimization problems. Through Lingo, the Hamiltonian cycle model is adjusted to this research issue and it is solved by using Lingo software. The Hamiltonian cycle gives the optimal path to each main cluster. The adjusted Hamiltonian cycle problem is given by Appendix A. After solving

the model, when the value is shown to be 1, it is taken as a path. The rows and columns show distance between districts. According to the above model, the other three clusters were also adjusted and solved using the Lingo software. The Hamiltonian cycle has given optimal paths.

Cluster 1: Dambulla, Anuradhapura, Vavuniya, Mannar, Jaffna, Kilinochchi, Mulaitivu, Trincomalee, Dambulla

Cluster 2: Dambulla, Puttalam, Kurunegala, Kegalle, Colombo, Gampaha, Kalutara, Rathnapura, Galle, Matara

Cluster 3: Dambulla, Matale, Kandy, Badulla, Monaragala, Hambanthota, Nuwara Eliya

Cluster 4: Dambulla, Polonnaruwa, Batticaloa, Ampara

After finding the optimal path of each cluster, total vegetable run is calculated.

Table 2 : Daily Vegetable Run in Kilometres

Cluster	Daily Vegetable Run km
1	674
2	804
3	661
4	426
Total	2565

Source: Results of the Research

Conclusion

This study is based on the Dambulla economic centre. This is an initial step to bring a correct protocol to arrange a transport model to distribute the vegetables and fruits from this centre in a cost-effective way. According to this study all districts in Sri Lanka could be divided into four clusters. At the beginning of this research we assumed that each district contains two warehouses and three vendors. This model is flexible enough to re-schedule at any request. It helps to create a larger model for solving any type of transportation planning problem. In this study the model is designed only for

one vegetable or fruit at a time. But it can be extended to apply for more than one item in the same excel sheet. For that purpose, advanced lingo code should be introduced and it is necessary to maintain a sufficient database. At the first task we arranged the optimal path to distribute the vegetables and fruits to the minor hubs. It reduces fuel consumption and waste of time. But in any case, for problems arising in the roads we should have an alternative plan to distribute vegetables and fruits. We recommend carrying out a pilot survey and use the knowledge of the gravity model to find out the optimal places for warehouses in each district. It is recommended that one person be assigned from each district to submit all sub-vendors' requirements. By arranging one person to manage more than one district we can reduce the cost incurred by MDL in Dambulla.

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Electricity Consumption and Economic Growth in the Presence of Structural Break: Evidence from Sri Lanka

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Keywords: Electricity; Demand; Economic Growth; Sri Lanka

Introduction

Global electricity demand doubled between 1990 and 2016, outpacing other fuels, and is set to grow at twice the pace of energy demand as a whole in the next 25 years (IEA 2018). In addition a recent world wide shift towards digital society, electrification in the transportation sector, expansion of business, and urbanization are some common reasons in many countries that has influenced the electricity demand growth (Athukorala and Wilson, 2010). This high electricity consumption is of concern in developing countries where a high growth rate of electricity consumption is expected. An interesting case in research and policy issues is whether aggregate electricity consumption, which is considered as a proxy for energy consumption, can forecast non energy variables. Lack of this understanding could result in misguiding long run investment decisions in the electricity sector. Such causes will lead to periodic power shortages which are common to developing countries (Athukorala and Wilson, 2010).

At the global scale the electricity sector attracts more investment than oil and gas combined at present (IEA 2018). Under such circumstances it is important to improve our understanding on the link between electricity demand growth and economic growth. This link which appears to have a

generic effect indeed varies across countries. The existing literature provides ample evidence on variation in this relationship across countries (Ozturk and Bilgili, 2015). We believe it is important to re-investigate the issue following the recent advances in time series estimation technique with a focus on structural breaks in the data generating process. Besides methodological differences such variations in the above relationship could be attributed to complementary effects of the power sector with others in the economy.

Objective

In this study we empirically investigate the relationship between electricity consumption and economic growth of Sri Lanka by incorporating structural breaks into the models. Such analysis could add a different dimension to this debate because allowing for structural breaks is important given that during the period considered the economy has experienced several shocks, all of which have potentially caused a break in economic growth and or electricity consumption.

Methodology

This study used annual time series data of the Sri Lankan economy from 1971-2015. The data was obtained from World Bank Development Indicators. All variables are converted to natural logs prior to analysis. The multivariate framework includes real GDP in billions of constant 2010 US dollars, real gross fixed capital formation (K) in billions of constant 2010 U.S dollars, real domestic investment, real Foreign Direct investment, total labour force (L) in millions and electric power consumption (ELC) defined in kilowatt hours. In this paper, we measure *n* as growth rate of labour force, g is the rate of technology growth and δ is the rate of depreciation. We further set $(g+\delta)$ at the rate of 0.05[14] because we notice it is a match with the available data in Sri Lanka. The use of Gross Capital Formation as a proxy for capital stock is standard in the energy literature[15].

[14]We follow Maniw, Romer, and Weil (1992) in choosing 0.05 as a reasonable assessment of the value of (g+d)

[15]Using gross fixed capital formation instead of the stock of gross physical capital has its own limitations. Gross capital formation as a flow variable, does not measure the stock of capital accumulated over years.

To examine the relationship between electricity consumption (ELC) and economic growth (GDP) we use an augmented production function in which output is expressed as a function of capital, labour and electricity consumption. We further segregate capital into domestic capital (DI) and foreign direct investment (FDI). This is to capture the relationship between external financing and economic growth. In our analysis, we apply the Granger Causality approach developed by Toda and Yamamoto (1995) to ascertain the direction of causality between electricity consumption and economic growth.

Results and Discussion

We used the LM unit root test with one break. Interestingly there are two variables for which the unit root null is rejected and the break in the intercept is significant at 10 percent level or better. To determine the presence of long-run equilibrium relationship between economic growth and its determinants we applied the multivariate Johnasen (1998) cointegration test. The results of Johansen cointegration tests or Trace statistics rejects the null of $r \leq 0$ but cannot reject $r \geq 1$ and also, the Lmax statistics rejects the null of r=0 but fails to reject r=1 at 5% level of significance. Even though we find that electricity consumption and economic growth in Sri Lanka are cointegrated, it does not confirm the direction of causality. For this reason, we implemented the TYDL causality test proposed by Toda and Yamamoto and Dolado-Lutkepohl (1995) approach to verify the direction of causality. We use the popular VAR modeling to infer the direction of causality among the variables in the model. The VAR model is just a special case of the AR models where we have more than one equation. The model suggests that electricity consumption Granger cause GDP growth but GDP growth does not Granger cause electricity consumption. However this does not imply that electricity consumption is not important for economic growth in Sri Lanka but rather that electricity consumption only has a minimal effect on economic growth.

The results of this study have many policy implications. Variations in the regulatory environment in the electricity sub-sector, linkages and complementarities between sectors would result in country wide heterogeneity between energy consumption and economic growth. Thus we

suggest that one needs to carefully consider the country specific effects particularly when the study uses country wide pooled data.

Conclusion

This paper contributes to the debate on electricity consumption and economic growth. For this purpose, recent developments in unit root tests considering structural breaks have been applied to investigate the relationship between electricity consumption and growth in Sri Lanka. The results indicate a unit root process in electricity consumption. The implication of the finding is that shocks on the demand side will be effective. Thus demand management policies such as block pricing, taxation, financial incentives and subsidies essentially have flattened the demand for electricity. The results further revealed that there exists a stable relationship between economic growth and electricity consumption. We found that generally electricity consumption, FDI and capital stock positively affect economic growth.

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Capturing the Diversity of Manufacturing MSMEs for Equitable Regional Development: The Significance of an Inclusive Sample[16]

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***Keywords**: MSMEs; Development; Manufacturing firms; Inclusive Sample*

Introduction

Micro, Small and Medium Enterprises (MSMEs) play a critical role in economic development in the Asia-Pacific region specifically in countries such as Vietnam, Indonesia, Sri Lanka and Cambodia (Nguyen and Wolfe, 2016). Usually, businesses with 1 to 249 employees are categorised as MSMEs (Kushnir et al., 2010). However, the size of MSMEs varies across countries (ibid) and, even within a country, there are variations in terms of business size, type and distribution of industries. For example, to be classified as an MSME in Sri Lanka, there should be 1 to 199 employees (industry and construction sector), 1 to 74 employees (services sector), or 1 to 34 employees (trade sector) (Department of Census and Statistics, 2015).

Apart from the size differences, MSMEs are also clustered into different areas. For example, in Sri Lanka, apparel-based enterprises are concentrated in Colombo (ibid) and jewellery-making businesses are clustered in the Central and Southwest districts (Dasanayaka and Sardana, 2015). In addition, there are differences in the availability of services across districts. For example, the number of licenced commercial bank branches and outlets[17]

[16] We thank Dr Amir Arjomandi, Dr Farzana Tanima and Dr Wasantha Athukorala for helpful discussions on an earlier draft. The project received funding from the Seed Grant Scheme at the Faculty of Business, University of Wollongong.
[17]Excludes student savings units and mobile units.

varies across districts with the highest located in Colombo (900 outlets) and the lowest in Mullaitivu (29 outlets) (Central Bank of Sri Lanka, 2018). Similarly, access to infrastructure such as road network, public transport, telephone, electricity and internet facilities, and proximity to commodity and raw material markets vary across districts and these disparities may influence MSME performance.

Moreover, provincial councils in Sri Lanka have legislative power over a variety of matters including agriculture, education, health, housing, local government, planning, road transport and social services (Parliament Secretariat, 2015). Some of the central government laws also permit provincial amendments – for example, the law on co-operative societies states that the councils of nine provinces are entitled to enact their own statutes (GTZ ProMis & LMFPA-Lanka Microfinance Association, 2010). These result in legislative differences across provinces which could influence the operation of SMEs. To sum up, some of the MSME performance differences are location-based and issues affecting MSMEs according to the location can only be captured in research by using spatially representative samples.

Objectives

This abstract explains a survey sampling strategy developed for a research project to select manufacturing MSMEs that are representative of location-based performance variations. The project focuses on efficiency performance of Sri Lankan manufacturing MSMEs, ascertaining key explanatory factors contributing to this, emphasising financial and locational aspects. An innovative conceptual framework is applied to measure firm efficiency and its determinants through integrating firm, entrepreneur, business environment, cultural and locational characteristics. The empirical analysis utilises the latest empirical techniques to measure technical efficiency.

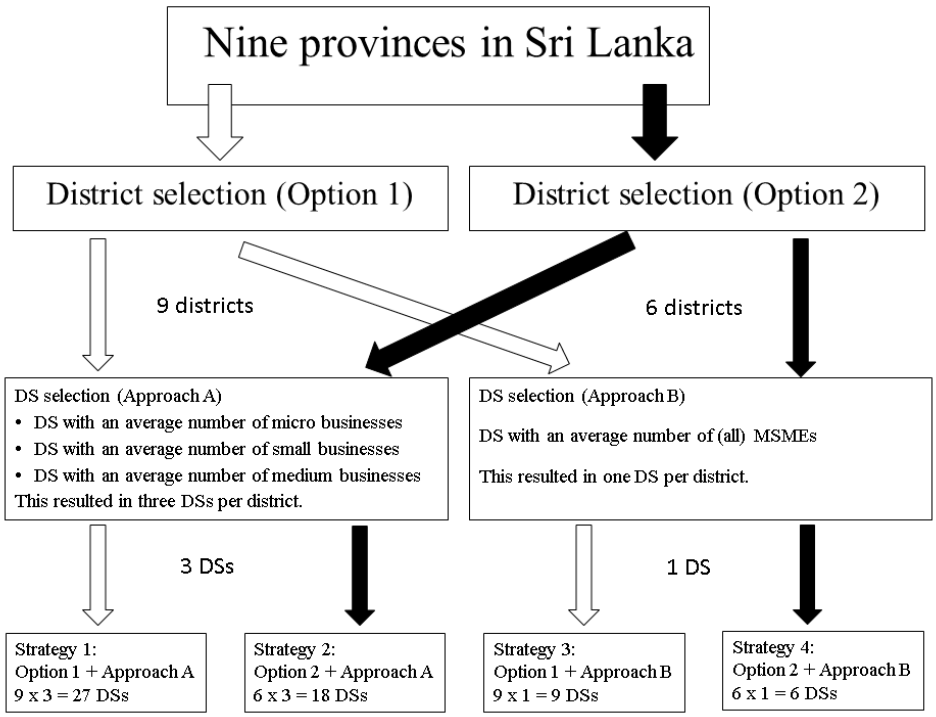
The sampling strategy is designed to achieve an inclusive sample of manufacturing MSMEs by considering distances from MSMEs to the capital city, province and district in which the MSMEs are located, and local

business conditions measured via *number of MSMEs in localities*. The survey targets a stratified sample of 500 manufacturing MSMEs.

Methodology

Below, we discuss two different methods that were considered to achieve a spatially representative survey sample to capture the diversities in regional MSMEs. The stepwise process reflects Sri Lanka's administrative structure that includes provinces, districts, divisional secretariats, and Grama Niladari (GN) divisions (Figure 1).

Figure 1 – Sampling Strategy



The first step took into account provinces in which the firms are located as different provinces encapsulate the location in terms of proximity to the capital city Colombo. This is important not only because Colombo is the shipping hub of Sri Lanka but also it concentrates the best infrastructure and technology, and the largest commodity markets in the country. The latter is

particularly important given that 99.8% of products produced by small firms and 83% by medium firms are sold within the country compared to only 44.5% domestic sales by large firms (World Bank, 2011). Hence, we included all nine provinces in our sampling strategy.

In the second step, we used Department of Census and Statistics data on non-agriculture establishments to develop two options to select districts:

1) Option 1: One district within each province was selected taking into account the ratio of manufacturing MSMEs. The aim here was to select a district that is closely synonymous with the ratio of manufacturing MSMEs of each province. This resulted in nine districts.

2) Option 2: Districts were classified into inner, middle and outer districts depending on their proximity to Colombo (<75 kms, 75< and <150 kms, >150 kms). Then, districts were ranked based on their population density and MSME density, and the districts with largest differences in terms of 'population density > MSME density' and 'population density < MSME density' were identified for each region (i.e. inner, middle and outer regions). The aim here was to select districts with different business environments (i.e. 'low population – high MSMEs' versus 'high population – low MSMEs'). This resulted in six districts.

Then, we used the same ratio of manufacturing MSMEs to select the DS divisions. Approaches A and B ensure the business environments in those DSs represent the relevant district norms. As Fig. 1 illustrates, this sampling method generated four strategies to identify a representative sample. Finally, we considered practical aspects such as project timeline, budget and the availability of interviewers in finalising the DSs from which the MSMEs to be selected. Businesses registered with the DSs will be used as a guide to identify MSMEs.

Conclusion

The contribution of Micro, Small and Medium Enterprises (MSMEs) to the national economy is growing in many countries. These firms also provide livelihoods to many, particularly providing a springboard for upward

mobility to those in low-income groups and in rural areas. Whilst MSME growth has been identified as a solution to growing inequalities in many regions, there are significant challenges that constrain the development of these firms. A number of them are of locational/spatial nature – e.g. access to finance, markets and suppliers, infrastructure, technology, business networks, support services, skilled labour, legislation relevant to businesses and competition. A spatially inclusive sample of MSMEs is required to examine these diverse issues. Drawing on a recent project on SME performance in Sri Lanka, this abstract presents a method to populate a sample of MSMEs representing diversities associated with proximity to the capital city, administrative regions and the local business environment. This sampling strategy emphasises that a spatially representative sample of MSMEs is crucial for investigating a wide-range of issues associated with those firms in urban and rural settings.

The expected outcomes of the project include an assessment of the key challenges for manufacturing MSMEs in Sri Lanka, identification of empirically grounded MSME development policy measures of economic and social benefit to Sri Lanka, regionally tailored MSME development strategies and general lessons benefiting MSME sectors in other regional economies. Capturing the locational/spatial disparities is particularly useful within a policy agenda that aims to achieve inclusive growth because MSMEs in remote and lagging regions may require additional support to improve their businesses. A wide range of policy instruments will need to be considered taking into account different challenges experienced in different areas to help promote spatial equity and inclusivity in the MSME sector. Once the locations of interest are identified for the survey, we relied on business registries held at divisional secretariats to obtain contact details of MSMEs. This is perhaps the only available dataset that provides relatively complete information about individual MSMEs. As a limitation of this research however this approach only captures the formal sector (i.e. registered MSMEs). Considering the relatively large informal sector in developing countries, future research should consider sampling methods that incorporate informal MSMEs.

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Influence of Mentality Towards Gender on the Development of Romanian Women's Careers

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Keywords: *Women; Leadership; Survey; Higher Education*

Introduction

In many countries around the world, women's opportunity to build a career and to access management positions is strongly related to the society's mentality. Different studies show that women do not succeed in advancing to top management positions, although education and job experience do not differentiate them from men (Beeson and Valerio, 2012). Eurostat data (2017) shows that, although women represent almost half of the employees in the European Union (EU), only 35% of them are in management positions. Among the obstacles to advancement are: structural obstacles (like the role assigned by society), family responsibilities, institutional mind-sets (masculine corporate culture, lack of company equality policies etc.) and individual mind-sets (lack of role models for women) (Barsh and Yee, 2012; ILO, 2015).

Global studies show that women's presence in the labor market is increasingly significant for economic growth and business development (Kuhlmann et al., 2017). In this context, the authors identified the research problem as one of analysing the particularities of the Romanian young generation's mentality related to women's career opportunities. The originality of the research comes from the authors' idea to identify the perspective of Romanian students on the topic considering them the new generation of employees who could change the present situation. The findings of this study can fill the literature gap by bringing new information

on the topic considering the particular case of Romania, a developing country inside the European Union.

Objectives

The research objective is to analyse the mentality of the Romanian young population related to women's efforts on building a remarkable career by identifying the students' opinions regarding the chances of women's integration in the labor market and their access to leading positions.

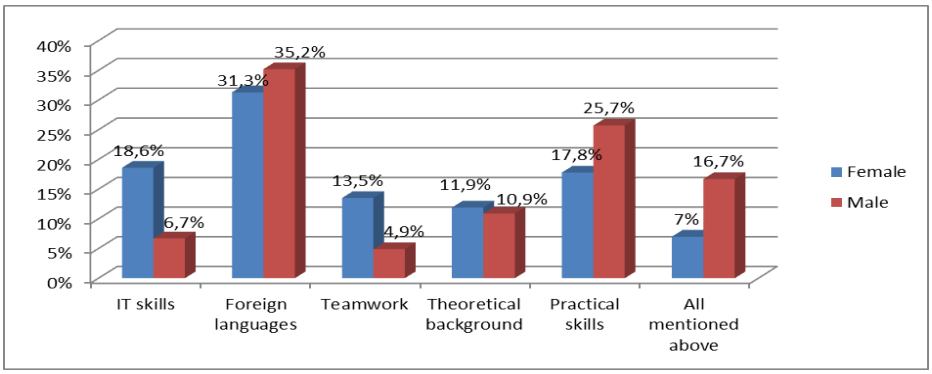
Methodology

To achieve the objective, the authors conducted a quantitative marketing research (a survey) involving a very large sample of 1122 students (aged 18-35) from 10 Romanian universities. The authors collected the data during December 2016 and January 2017 using an online questionnaire posted on Google Drive platform. The sample was built using multistage sampling based on 4 criteria: geographical area, university size, faculty profile and the study level. 55% of respondents are Bachelor's students, 35% - Master's students and 10% - PhD Students. The sample structure includes 68.5% females and 31.5% males. The data collected was analysed using the statistical software SPSS 17.

Results and Discussion

The most important variables analysed in this study are: the barriers faced by female students in applying for a job, the essential skills and competencies for being employed, women's chances of becoming leaders and the essential attributes for women to have in order to access management positions. The most important barrier for Romanian students in looking for a job is the *lack of professional experience*, followed by *the gap between theory (from academic courses) and practice*, mentioned by a third of respondents. An important barrier mentioned mostly by female students is *gender discrimination*. This fact confirms the fact that in Romania, as in the European area, young women still have more difficulties to be employed than young men (ILO, 2015).

The following figure shows the students' opinions on the skills considered essential in order to have a good job. The females consider that elements like teamwork skills, a strong theoretical background and IT skills help a person to have a good job, and these opinions are different from the male perspective.



Source: Authors

Figure 1. The most important skills for the integration on the labour market

In the last 10 years, at the European level many actions empowering women to a larger access at managing positions became more visible, in various fields previously reserved for men. This research shows that in Romania the hope that women can become leaders is very small. Therefore, according to Table 1, only 5.7% of the respondents give women a greater than 75% chance to become leaders.

Table 1: Opinions regarding the women's chances to become leaders

Women's chances to be leaders (%)	Males (%)	Females (%)	Total (%)
Less than 25	11.6	12.5	12.1
25 - 50	49.3	50.1	49.8
50 - 75	36.6	29.7	32.4
Over 75	2.5	7.7	5.7

Source: Authors' estimation

According to the study, the attributes considered a must for women to have a chance at a management career are: motivation and perseverance,

professional skills and gender equality inside the organisation. The following figure shows that a woman with the highest chance to become a leader must have a variety of skills and competences. A high percentage (28.3%) considers that the ability of teamwork is essential for a leader. Also, 13.2% consider it essential to know foreign languages, 11.3% consider that it is necessary to have a solid theoretical background. Equal percentages of respondents (7.5%) mention IT skills and practical skills.

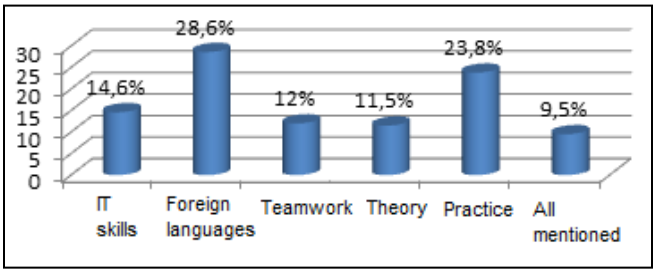


Figure 2: Skills of women considered for the future of the economy

Conclusion

The research results show that in Romania women face more barriers than men in finding a job and an important reason is gender discrimination. The women interested in building a career and achieving management positions face a difficult path, the main obstacle being the conservative and obsolete mentality of the society, even for the young generation. The small trust of young generation in women becoming leaders could be the result of the traditional education, where the woman is prepared for different roles in life compared to men. The research results show that in Romania are gender deep-rooted stereotypes that define women's and men's roles inside the community also for the young generation. For a future balanced Romanian society it is important that the individuals change their mentality. The first step can be done in the educational environment where teachers should explain the benefits of gender equality. The research results show the employers that an important part of young women still felt discriminated at job interviews. So, employers need to realize is the fact that gender is not an indicator of competence. The decision to recruit, train and promote young people (women and men), must be always based on criteria linked to skills and behavior. In conclusion, gender stereotypes should be forgotten,

corporate cultures should be shaped and really implemented and the lack of measures should be solved in order to give real chances to women to add value to the economy and society.

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Empirical Relationship of Mortality Rate and GDP Per Capita in Sri Lanka

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Keywords: *Birth Rate; Infant mortality rate; GDP per capita; Causality*

Introduction

Infant mortality is an important indicator which represents the probability of death of an infant before his or her first birthday. It symbolizes a country's socio economic development towards the standard of human well-being in a broader area. According to the Central Bank annual report 2017, the infant mortality rate was recorded as 8.5 per thousand live births. There was a considerable decline in infant mortality in the post-liberalized era as compared to the pre-liberalized period. According to the UNICEF publication "Every Child Alive - The urgent need to end new born deaths" stated that Sri Lanka is the first among 52 low-income countries in the world with regard to infant mortality rates and also the World Bank named Sri Lanka as a role model for other countries with regard to upgrading the health sector. On the other hand, the mortality rates can be considered as indices which provide a baseline for the country's initiatives towards sustainable development. There are relatively less studies which have examined the factors affecting the infant mortality in the Sri Lankan context. "Demographic transition theory mentioned that the infant mortality tends to decline due to upgrading in living standard and also in the medical technology" (Lee, 2003). The study is initiated to take necessary steps for further improvements in maternity and child health in Sri Lanka.

Objective

The study objective is to identify the relationship between infant mortality with birth rate and per capita GDP of Sri Lanka over the period from 1980 to 2016.

Methodology

Time series data were extracted from the World Bank database for the period 1980-2016. Since study involves time series data, the researcher applied the Augmented Dickey Fuller (ADF) unit root test to check the stationarity of the series. This study applies multiple linear regression model which consists of Birth Rate (BR), change in GDP per capita (GDP) and change in Infant Mortality Rate (IMR) to examine the relationship. The model can be depicted as follows;

$$IMR = \beta_0 + \beta_1 BR + \beta_2 GDP + \mathcal{E} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Normality test, Breusch-Godfrey Serial Correlation LM test and Heteroskedasticity test were used to establish the validity of the above model. Finally, the study applied the Granger Causality model to find the causal relationship between the variables mentioned above. Further, Akaike Information Criterion (AIC) and Schwarz Information Criterion (SC) were selected to decide the optimum lag-length of it.

Results and Discussion

The results of the Augmented Dickey-Fuller unit root test revealed that the change in mortality rate, birth rate and GDP per capita were stationary at level of the series. The estimated result of the multiple linear regression model shows that there is a significant relationship between BR and IMR since the p value is recognized to be statistically significant at 0.01 level. As far as the association between ΔGDP and IMR, it is not significant at 1% or 5% or 10% level. It has a negative impact on ΔGDP. The R^2 of the estimated model was 0.501. It implies that 50.1% of the variability in the dependent variable is explained by the predictors named BR and ΔGDP. Further, the F value was found to be 16.577 at $p<0.01$. Hence, it can be inferred that the model is good at explaining the changes in the outcome variable.

Durbin-Watson statistics (DW=2.01) and Breusch-Godfrey Serial Correlation LM Test (p-value=0.4993) show that the estimated model is free from serial correlation. Further Breusch-Pagan-Godfrey Heteroskedasticity Test shows a p value of 0.8510. Since the p value is greater than 0.05, it is an indication of constant variance leading to the absence of heteroskedasticity in the time series. Therefore, residual diagnostic tests suggested that the above estimated model is more robust in predicting outcome.

Table 1: Results of Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
ΔGDPdoes not Granger Cause BR	32	4.47292	0.0081
BR does not Granger Cause ΔGDP		2.64438	0.0596
ΔIMR does not Granger Cause BR	32	3.68756	0.0184
BR does not Granger Cause ΔIMR		2.18451	0.1027
ΔIMR does not Granger CauseΔGDP	32	1.42392	0.2577
ΔGDPdoes not Granger Cause ΔIMR		3.30102	0.0282

According to the AIC and SC, suggested optimum lag length is 4 to run the granger causality model. Results of the Granger Causality as stated in the table 1 explores that causal relation between ΔGDP and BR at 1% while, there is a causal relation between BR and ΔGDP at 10% by indicating bi-directional causality. There is a one directional causality from ΔIMR to BR but not vice versa. Further, results show one-way causality from ΔGDP to ΔIMR but there is no causality from ΔIMR to ΔGDP. Ali et al., (2015), Hojman (1996) and Mogford (2004) found that Birth Rate and GDP per capita positively impact on child mortality which are the same as this study. Further, the findings here show that there was no significant relationship between GDP per capita and infant mortality rate. This finding is contradictory to the results of O'Hare (2013), Schell (2007) and Amouzou & Hill (2004).

Conclusion

This study was directed towards identifying the empirical relationship of Birth Rate and GDP Per Capita with Infant Mortality Rate in Sri Lanka during the period 1980 to 2016. Results show that the birth rate had a negative significant association with Infant Mortality Rate in Sri Lanka and finally the researcher has concluded that there is a bidirectional as well as unidirectional causal relationship among the variables used in the study. Birth Rate and GDP per capita are not the only factors determining infant mortality. There might be factors which may have a greater explanatory power. For example, factors like immunization, child birth weight, contraceptive use and level of mother's education might have a profound impact on infant mortality which have not been considered in this study. Therefore, researchers can add more insight into this thought by taking into account these variables in their future research. Even though Sri Lanka is progressing towards a low Infant Mortality Rate, the government should pay attention to improving further so as to bring forward its Human Development Index on par with developed countries.

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A Comparison of Infant Mortality Rates between Pakistan and Rest of the World

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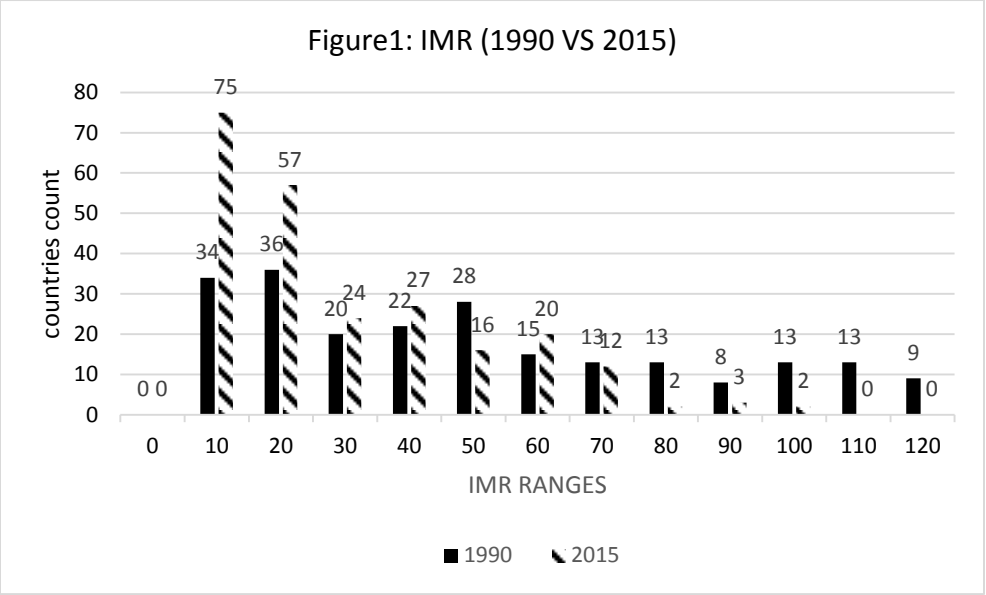
Keywords: *Child Mortality; Human Capital; Health Status; Pakistan*

Introduction

Child mortality is regarded as one of the best measures of the health status of a country. It is also considered as the key factor that indicates the inclusive and sustainable development of human capital in any economy. The 1990s have seen a remarkable decrease in mortality among infants and children in most developing countries (White, 1999). After the Millennium Development Goals (*MDGS*) in the 1990s we have seen a remarkable decrease in infant mortality among children in most developing countries. In some countries, particularly in sub-Saharan Africa, these declines in mortality among children have slowed and are now increasing again (Hanmer, Lensik et al, 2003). South Asia and Sub-Saharan Africa are the poorest and the most underdeveloped parts of the developing world, with the worst absolute and relative indicators of health and poverty in the world. These two regions have some of the highest child and infant mortality rates (*IMR*) in the developing world.

Pakistan tends to perform relatively poorly. In this study I analyzed why infant mortality rates are relatively very high in the era of MDGS and point towards policy recommendations for reducation in infant mortality rates**.** The graph below makes some comparisons of Infant Mortality Rates in the 1990s and 2015 world wide.



Source: World Bank Database

We divide the world infant mortality rates into bins of size ten and compare the number of countries in 1990 and 2015 to show the progress of the world in the era given in Figure1. There were only thirty four countries whose infant mortality rates lies between zero and ten indicated by black dotted graph in 1990. In the other graph of 2015 however, this number increased to seventy five, which is more than double, showing a significant reduction in infant mortality rates during the era of MDG's in each Bin.

We know that infant mortality rates are declining in Pakistan but the rate at which IMR is decreasing is painfully slow and it will take decades to overcome the issue of high IMR at the pace we are moving. So, this study recommends policies and best practices in the region that will act a catalyst to increase the pace of reduction in IMR. There were a lot of studies done on Infant Mortality Rates but this study is unique in the context of Pakistan because it will provide provincial analysis at grassroots level, which will help the provincial government to take measures accordingly as all provinces in Pakistan are not consistent in reducing IMR.

Objective

The objectives of this study are as follows:

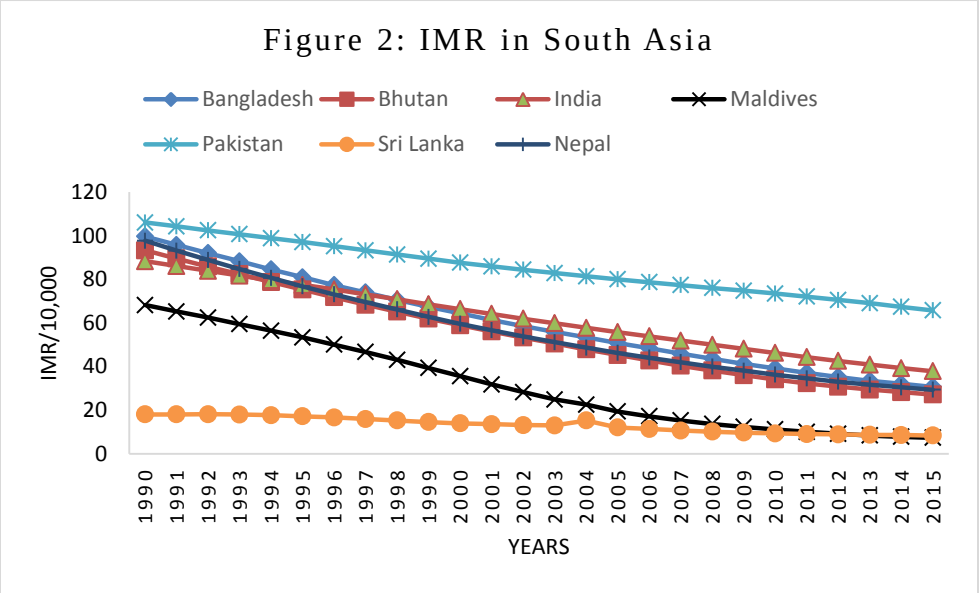
- To investigate the progress of Pakistan regarding reduction in infant mortality rates during the era of MDG as compared to the world and the South Asian Region.
- To recommend strategies for reduction in infant mortality rates at provincial and national level in Pakistan.

Methodology

The data on infant mortality rates at regional, country and provincial level used for this study is secondary, and is collected from the World Development Indicator, Pakistan Health Demographic Survey. For Pakistan data is taken for the 25 years ranging from 1990 to 2015. The last Pakistan Health Demographic survey was conducted in 2013 and thus has data on provincial level up to 2013, while regional and country level data are taken upto 2015 because our research only focuses on the MDG era. The study uses quantitative analysis by using the tools of exploratory data analysis for finding the summary stats, histograms, line graphs and the radar graphs to examine the infant mortality rates among the regions, countries and within country provincial level.

Results and Discussion

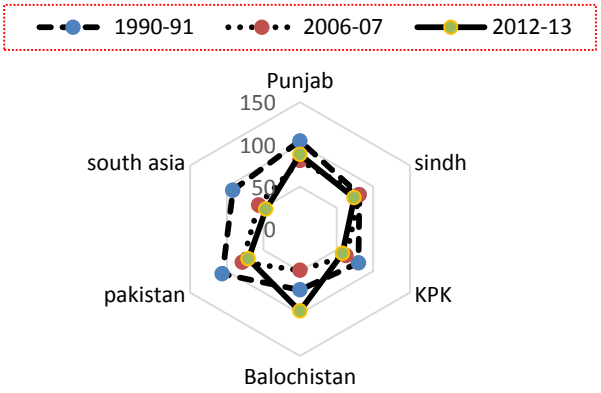
In the regional level analysis we can see that Pakistan started with the worst and graph shows that our progress is not matching the rate at which other countries in the region are progressing as India and Bangladesh were almost on par with Pakistan in 1990 (World Bank Database, 2015).



Source: World Bank Database

The Maldives and Sri Lanka provide useful lessons. The main reason for Sri Lanka's low Infant Mortality Rate is the anti-malaria program started by the government which reduced infant mortality significantly during 1980 and this was maintained with up to 2015 (Lucas, 2010). Looking at the Maldives, their Social Sector expenditures have averaged nearly 50 per cent of the budget in recent years. Maldives has also maintained almost universal coverage of all vaccines for preventable childhood diseases for nearly two decades. Data shows that, 89 percent of children aged 12-23 months were fully vaccinated by 12 months of age (WHO, 2008). The per capita expenditure on the health sector in the Maldives is the highest in the South Asian region. In the period 2005-2011, per capita health expenditure increased from US$ 136 to US$ 247. Notable achievements have been made in the control of communicable diseases as a result. Per capita expenditure on health has risen steadily from about $60 in 1995 to an estimated $200 in 2007 (UN, 2014).

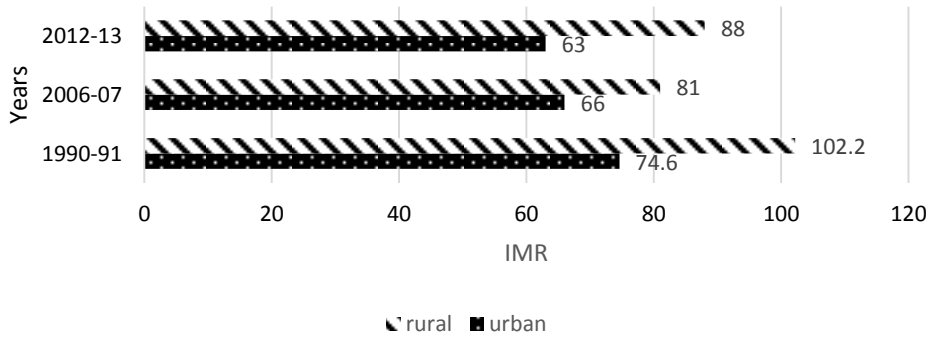
Figure 3: IMR of Provinces



Source: Pakistan Health Demographic Surveys 1990, 2007 & 2013 & Graph constructed by Author

From Figure 3, we can see the progress of all provinces from 1990 to 2015 regarding a reduction in the infant mortality rates. The progress of Punjab and KPK is relatively good in the 2006-07 and 2012-13 survey. The, situation in Baluchistan has worsened during 2012-13. According to the report of Evidence Project by the Population Council the reasons for higher infant mortality rate are lack of facilities of health care and poverty, illiteracy and teen aged mothers.

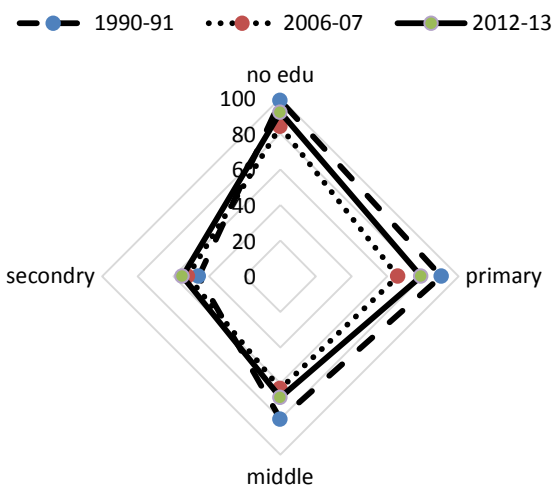
Figure 4: IMR Rural VS Urban



Source: Pakistan Health Demographic Surveys 1990, 2007, 2013 & Graph constructed by Author.

From the bar graph in Figure 4, it is shown that from 1990-2015 infant mortality rates are low in urban areas and high in rural areas due to lack of facilities of health care, no proper vaccination and poverty, uneducated mothers, illiteracy and no awareness about the family planning and health care of child.

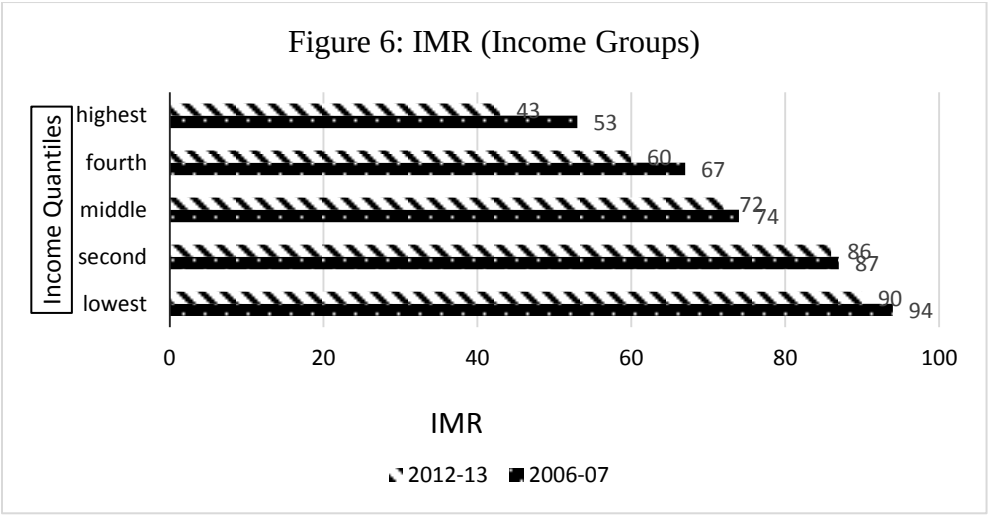
Figure 5: IMR with Mother Education



Source: Pakistan Health Demographic Surveys 1990, 2007, 2013 & Graph constructed by Author.

Above figure shows that education of mothers plays a substantial role in the reduction of infant mortality. With no education of mother the IMR of their children is eighty five in 2013, whereas, the mothers with secondary education have IMR of forty-two. There are policy implications for female education reducing infant mortality significantly. Education of females will provide awareness of the health care, family planning and avoid the incidence of teen age pregnancy.

Figure 6: IMR (Income Groups)



Source: Pakistan Health Demographic Surveys 1990, 2007, 2013 & Graph constructed by Author.

In Figure 6, bar graphs show infant mortality rates among the different income groups of Pakistan in 2006-07 and 2012-13. We can see that infant mortality rates are very low for the highest income quantile in both surveys while infant mortality rates are very high for the bottom income quantile. One more important point emerges from here that major contributor in the reduction of infant mortality rates over the past decade is the highest income quantile, while in the lowest, second and middle quantiles there is a slight reduction. Policy should be focused on the bottom quantiles if the country wants to reduce its infant mortality rates by providing good public health facilities and targeted health programs.

Conclusion

It is evident that Pakistan can learn a lot from the world and countries of our region like Sri Lanka and Maldives to reduce their infant mortality rates significantly in the past two decades. I have looked at the policies of the developed world and then specifically at the policies and practices of the countries of our region and suggest some policy recommendations below.

- To educate females on nutrition so that mother's education reflects awareness about health care and family planning.

- To increase the health budget significantly and develop the infrastructure for health care and proper vaccination for the children of age up to 12 months all around the country.
- Focus on the rural and under developed and remote areas to provide health care facilities and resolve malnutrition issues of children.
- Government should launch targeted programs for the bottom income quantiles which are more vulnerable to infant mortalities.
- Planning at local/community level required to reduce infant mortality rates, such as lady health workers programs and NGO's role regarding health awareness among mothers.

What countries in our region did and achieved low infant mortalities are on the basis of the above mentioned policies. Sri Lanka and Bangladesh introduced targeted health programs, and they have a very high literacy rate for both males and females. Furthermore, Maldives' per capita health expenditure increased from US$ 136 to US$ 247 from 2005-2011. In conclusion, I would like to say that it is very painful for a mother to face the death of her child even before his/her first birthday. In a country like Pakistan still in age of technology and medical advancement, mothers lose their children and the number is sixty three per thousand, which are very high. We also need to think very seriously about to save these lives and reduce the pain and loss of their parents.

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Understanding Agriculture-Industry Inter-Linkages for Agrarian Development: Empirical Evidence from India

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***Keywords**: Indian Economy; balanced growth; Development; Agriculture*

Introduction

The importance of the agrarian sector has long been debated in development theory. The sector not only serves as a pool of surplus labor, but also provides food security to the economy, employment while industry is at its nascent stage, raw-materials to fledgling industry and a source of demand for the industrial sector's products (Karunarathna, 2014). However, the Indian agricultural sector has been reeling under socio-economic distress over the past two decades. Agricultural output growth in the 1980s was 3.19% and it fell to 1.58% in the 1990s. Per capita availability of arable land has experienced a fast decline in the recent past, falling from more than .2 hectares per person in 1980s to less than .15 hectares per person. The productivity rates for all major crops; wheat, paddy, pulses etc., have been falling. The same period has also witnessed incidence of suicides among farmers. The toll has reached about three lakh farmers. With agriculture providing only 14% of the national GDP, roughly 50% of the population depends directly or indirectly on the sector.

Against this background, it becomes important to study the changing role of the agriculture sector when confronted with structural transformation. Structural transformation in its core also means changing inter-sectoral linkages over time. Empirically, in the context of India a number of studies have focused on explaining the trend of these linkages. Mathur (1990) concluded that agricultural growth is a necessary condition but not a sufficient condition for industrial growth. There are various non-agricultural

factors like power, transport infrastructure, institutional finance, etc. that are important for the growth of industry. Kanwar (2000) studied cointegration of different sectors in a multivariate autoregressive framework and found that growth in agriculture, infrastructure and services sector affect income generation in the manufacturing sector, while the reverse is not true. Sastry et al (2003) using the input-output tables found that agriculture still plays a significant role in determining the overall growth of the economy through its linkages with other sectors. Kaur et al (2009) used both input-output tables and co-integration analysis and found that agriculture exhibits strong demand linkages with the industry sector, while the industry sector's demand dependence on agriculture has weakened since the 1990s. Further, through cointegration analysis they find strong long-run equilibrium among primary, secondary and tertiary sectors.

Objective

The Agriculture Sector is thought to be the initial reservoir of resources until other sectors start producing a surplus of their own for re-investment. Transfer of surplus from one sector to another happens through exchange where the exchange can either happen in a free market or can be mediated by the government. However, it is argued that over time the industrial sector diversifies beyond agro-based industries. Further, with the opening up of the economy domestic sectors form important linkages with the foreign sector thereby affecting domestic sectoral inter-dependence (Thirlwall, 1986; Vogel, 1994). Our hypothesis is that over time, the agriculture sector's exchange either in quantity or in value with other sectors has become weak, which has exacerbated the distress. If the people in the agriculture sector are not able to generate enough value for their commodities so they can reap enough surplus for investing in the next cycle then surely they will be left to subsist with minimum means.

Methodology

Data is obtained from the Data Book for Planning Commission prepared by Central Statistical Organisation of India. This provides time series data from

1950 to 2014 on GDP at factor cost for the sectors; agriculture, industry, manufacturing and services at constant 2004-05 prices.

We apply causality test in a bivariate framework on the long time series data based on Granger (1969). According to Granger (1969) the notion of causality is based on the assumption that the future cannot cause the past. Consider a bivariate VAR model with two variables, X_t and Y_t, where both X_t and Y_t are two stationary stochastic processes. In such a framework, X_t is said to Granger cause Y_t if we are able to make better forecasts of Y_t with all the information available than if the information independent of X_t had been used. To test the causality relationships following model is used.

$$Y_t = \sum_{i=1}^{n} \alpha_i X_{t-i} + \sum_{j=1}^{n} \beta_i Y_{t-j} + \mu_{1t}$$

$$X_t = \sum_{i=1}^{n} \gamma_i X_{t-i} + \sum_{j=1}^{n} \delta_i Y_{t-j} + \mu_{2t}$$

Toda and Yamamoto (1995) present a lag-augmented approach to rectify the non-standard Wald statistic. The T-Y approach ensures that the asymptotic distribution is valid regardless of the order of cointegration and is immune to lag selection tests. Instead of the VAR (p) in the above equations, they estimate an augmented VAR ($p+d$) model, where d is the order of integration. For most macroeconomic data, the order of integration is 1, so d=1 in most cases. Further, a non-parametric test based on Heimstra Jones (1994) improved upon by Diks and Panchenko (2005, 2006) is applied. Apart from bivariate VAR, multivariate VAR is also applied. It tests the conditional independence of the variables with critical values based on asymptotic theory. The test can be run for a multivariate case where, under the null the conditional distribution of Z given (X, Y) = (x, y) is the same as the conditional distribution of Z given only Y = y.

Results and Discussion

The analysis was started at a broader level to test the causality between agriculture sector and non-agriculture sector as a whole. The non-agriculture sector includes the industry sector, which, in turn includes manufacturing and infrastructure, and the services sector. As can be observed, our results tell us that there is uni-directional causality from non-agriculture towards agriculture. In other words, growth in the non-agriculture sector GDP Granger causes growth in the agriculture sector GDP. Further, the non-agriculture sector was broken down into its component parts and the same analysis was run. As it turned out, no test projected significant results for the individual sectors. Since, the data on national GDP already includes the data on agricultural growth, so there could be a feedback from the agriculture sector to itself. There could be a problem of double counting of the agriculture data.

1990 served as a period of tectonic structural change for the economy. Based on this we break our period of analysis into two: before and after the reforms. A uni-directional linkage was observed between the agriculture sector GDP and the industry sector GDP; i.e. growth in industry sector GDP Granger causes growth in the agriculture sector GDP. So, the causality running from national GDP to agriculture can be explained through this link between industry and agriculture.

Parametric tests make quite rigid assumptions about the density functions of the time-series data. Moreover, they assume that the relationship between variables is linear in nature. We are unable to reject the null hypothesis of non-causality. There could be a case where the presence of a third variable might be affecting results. Hence, Multivariate non-Parametric causality tests were also performed, which control for the presence of the third variable. As can be observed, once the restrictions were removed and more variables were added, the results changed completely. The agricultural sector's growth has followed a variable path over the years (Twelfth Five Year Plan, 2013). This erratic behavior in the output growth of the agriculture sector could have been normalized due to the restrictions that were placed on the parameters of the first test. However, once restrictions are removed the causality is no

longer sustained. The literature on inter-sectoral linkages has argued that growth in agriculture is linked to growth in non-agriculture. However, we have found no evidence to support the argument that the growth of the sectors is inter-dependent.

Conclusion

The theory on economic development, and growth models have consciously or inadvertently talked about the linkages between different sectors of the economy. Our focus in this study has been to explore the linkages between the two sectors i.e. agriculture and industry. If the framework of growth follows a pattern of a feedback, from within and externally imported from other sectors, then our understanding is that this relationship can help us recognize the reasons why the individual sectors are suffering from lower growth. To begin with, we initiated the study by developing a macro picture of the situation and how it has evolved over the years. We ran a series of parametric and non-parametric tests. However, our results from non-parametric tests have completely overturned these conclusions. When we loosen the strict assumptions of parametric tests on our data of 63 years, the models show us that no long-term relationship exists between the sectors. Even if it did exist, it was not sustained over the years. Both our conclusions give us new information that is different from the results of our academic contemporaries who have undertaken similar studies. Through similar and less robust techniques they have concluded that agriculture still plays an important role in economic development and there is feedback from agriculture to other sectors. However, that has not been the case in our study.

On the contrary, our results, from parametric tests, show the causality runs from the other sectors towards the agrarian sector. This understanding when juxtaposed with the current predicament of the agrarian sector is quite ironic. The lack of inter-dependence of the sectoral growth rates means that the sectors have been financing their own growth over the years. Given that the agriculture sector employs around 50% of the population with limited ability to trade with other sectors and small employment elasticity of the non-agricultural sector, agriculture sector does not generate enough value for investing in the next cycle of production. This leaves the sector at the mercy

of banking and insurance companies whose presence in the rural areas has also diminished in the last two decades. India has followed an unbalanced growth strategy with focus on the industrial sector and currently, the service sector. Over the last two decades the agriculture sector has witnessed a falling rate of public investment. The decoupling of growth means that investment and growth are not trickling down from the modern industrial sector and public investment in the agriculture sector needs to be revived to bring the sector out of distress.

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Earnings and Marketing Structure of Paddy Farming: A Case in Huruluwewa Colonization Scheme in Anuradhapura District

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Keywords: *Earnings; Marketing; Paddy Farming; Anuradhapura*

Introduction

In the early 1980s, the IMF and the World Bank advocated that the government of Sri Lanka undertake market-oriented policy reforms in the economy, including in the agricultural sector, under the Structural Adjustment Program (SAP). The main argument made was that government operations in agricultural marketing (input and output markets) are not effective and efficient, and do not promote the interests of farmers and consumers. Farmers in Sri Lanka's main paddy producing areas complain of difficulties in selling their paddy harvest due to failures in the government paddy purchasing mechanism. Through the market-oriented policy reforms in agriculture, it was expected to increase market competition and thereby increase producer prices (producer welfare) and stimulate agricultural growth and income. With this policy reform, the significance of the Paddy Marketing Board (PMB) and Multi-Purpose Cooperative Societies (MPCS) in paddy marketing was reduced due to the competition from the private sector (Prasanna, 2006). For example, during the 1980s, the open market price of paddy exceeded the guaranteed price, rendering the government paddy purchasing institutions as financially unviable (Weerahewa, 2004).

The studies cited numerous reasons for the widening gap between producer price and consumer price, and thereby poor earnings from paddy farming. Among these reasons, the oligopolistic nature of traders and smaller involvement of the government sector in paddy marketing activities are the

decisive reasons (Prasanna, 2006). Hence, today, paddy farming has become an economically unviable sector, leading to indebtedness among the farmers (Irshard & Thiruchelvam, 2006), and the government has to spend more on subsidy programs and other supportive programs to protect the paddy sector due to its importance concerning national food security; it provides approximately 50% of the daily calorie intake of households with 45% of per capita protein requirements, and livelihoods of many farmers. At present, from over 1.8 million paddy farmers, the majority of small-scale farmers own less than 1 ha. of land and are primarily dependent on rice farming. In this context, it is questionable whether the nature of the paddy market structure is a matter of poor earnings of paddy farming.

Objectives

The main objective of this paper is to study the nature of the problem of poor earnings of paddy farming, paying particular attention to the paddy marketing channel in the major colonization schemes in Sri Lanka. The study will focus on the following points: 1) Analysis of cost and income of paddy farming, 2) Examination of the nature of the paddy marketing channel, 3) Analysis of the effects of the existing paddy marketing structure on farmers' production and marketing conditions, and 4) Suggesting ways to correct paddy marketing problems by empirically conceptualizing the paddy marketing problems, solutions, and challenges.

Methodology

In order to deal with the research subject, data for analysis was drawn from two field surveys—farmer survey and survey on traders in paddy marketing channel—in the Huruluwewa Major Colonization Scheme (HMCS) area in January / February 2018. The HMCS was selected for the study as it is one of the main paddy producing areas of the North Central Province in Sri Lanka. A pre-tested, semi-structured questionnaire was employed in each survey to gather data on the socioeconomic background of paddy farmers, paddy production, characteristics of paddy marketing channel, and nature and functions of participants in paddy marketing channel. One hundred and ten (110) farmers in the right-bank and left-bank of the HMCS were selected for the study by giving equal probability to all farm households in sampling. In addition, 20 traders in the paddy marketing channel, officers in the

government paddy purchasing centers in the area, and leaders of farmer organizations were interviewed to gather data on the paddy marketing channel in the area. The collected data were analyzed using a descriptive statistical method.

Results and Discussion

The analysis of average cost and income of paddy farming in the survey area shows that farmers earn a net income of Rs. 12,989 per acre by spending Rs. 42,575. As the average farm size in the area is 1.8 acres, the total net income of average farmers in the scheme is Rs. 23,380. Mean Selling Price of paddy in the concerned season of the study was Rs. 39 and only 47 farmers could sell their produce at the above mean price. However, the distribution of farmers' net income revealed that 37 (33.6%) farmers did not receive the deserved positive net income. Moreover, the study identified a positive relationship between farm productivity and per acre normalized profit. The results further designate a negative relationship between farm size and paddy productivity, indicating declining farm productivity when farmers increase the land scale of farming. This finding contradicts with other studies that encourage farmers to increase the land scale to get economies of scale. The possible reasons explained by the farmers for the negative relationship between farm size and productivity are water management issues at the field level frequently faced by the farmers due to drought, and the problems of irrigation water management by the Irrigation Department at the scheme, and the prevailing labor shortage.

Several village-level collectors were reported in one village. The capacity of storage facilities of interviewed collectors at the village level varied from 11,000 kg to 200,000 kg. Most of them had zero transportation cost because usually, the farmers transport their harvest from farm to assembler's place. Most collectors had their own small stores, and some had concrete compounds for drying the wet paddy. However, the collectors do not hold the collected paddy for a long time, and 80 percent of them kept 50 cents from each kilogram as their profit. They usually find the capital for buying paddy by their own capital or savings, pawning jewelry or registration certificates of their vehicles and obtaining a short-term loan from the banks.

The main feature of the channel is the hierarchical relationship between participants in the marketing channel based on the market. It shows that the paddy market in the area is dominated by a few large-scale traders directly via their agents, who find the required paddy procurement finance from large-scale traders and indirectly through village-level assemblers. At the village level, 67% and 15% of farmer products are channeled through village-level collectors and agents of large-scale traders, and a proportion of 80% and 100% of assembled products are then shipped to large-scale traders by the village level collectors and agents of large-scale traders respectively. The government purchasing mechanism has only purchased 7% of production in the area, from which, 80% have been directed to the large-scale traders, particularly during off-season. Thus, it indicates that 74.2% of the products sold by the farmers is handled by a few large-scale traders, particularly in the region. This assembled paddy by the large-scale traders is ungraded and unprocessed; thus, they undertake marketing functions—finance of paddy procurement, transportation, storage, processing, rice distribution, and price determination at the farm level. The interviews with village-level collectors revealed that they had to dispatch their assembled paddy to large-scale traders because generally they are provided with price information with an assured forward market. Thus, it is posited that there are only a few buyers or there is ***an oligopolistic market structure*** for paddy in the survey area since a significant proportion of farmer products is handled by only a few traders in the NCP.

The results also showed that 63 (57.2%) farmers are selling their harvest before eight weeks (between A and B) after harvesting (or before the next cultivation season) at a price below the average. The pressing concern of this matter is that this leads to lower income in paddy farming (even a loss). As depicted in Figure 1, there are 16 (14.5%) farmers in the negative net income region because of selling the harvest at the harvesting period, even though their farm productivity is above the mean productivity in the area. The study identified causes that influence paddy farmers to sell their harvest in between the harvesting time and the beginning of next cultivation season. Less financial capability to cover the cost of production within a cultivated season and the debt trap laid by the village-level paddy collectors are the critical factors which limit farmer movement to a higher price region in certain seasons.

Conclusions

The primary aim of this study was to investigate the nature of the paddy marketing structure in one of the main colonization schemes in Sri Lanka, to understand whether it explains poor earnings of paddy farming. The study results indicated that paddy farmers do not derive adequate net income from paddy farming, and a majority of farmers sell their harvest at the harvesting period at the lowest price; this does not support them to cover the cost of production adequately. Further, the oligopolistic market structure in the paddy marketing in the area was revealed by the study as few large-scale traders handle 74.2% of farmers' production. The lower financial capability of the farmers to cover variable costs of paddy farming and pre-modern economic characteristics of the paddy marketing channel have created a space for large-scale traders to grab the farmers' production at a minimum price during the harvesting period. Farmers do not receive any service from these traders regarding price information, input supply, credit provisions, or assured market for them at a reasonable price. The study found small involvement of the government in paddy marketing and zero involvement of farmer organizations and agricultural cooperatives in paddy marketing activities, though they provide agricultural extension services, inputs (managing the government subsidy programs), irrigation water management, and other farm-related services.

In conclusion, it is evident that the market-oriented policy reforms have not led to improved market competition in paddy marketing and enhancement of the welfare of paddy producers in the scheme. Thus, immediate measures should be taken to address the marketing-related issues faced by the farmers in main paddy growing areas of the country.

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මූල පද *දරිද්‍රතාවය, ආර්ථික වර්ධනය, සමාජ සංවර්ධන, අසමානතාවය*

හැඳින්වීම

ගෝලීය සංවර්ධන සන්දර්භය තුළ දරිද්‍රතාවය යන සංකල්පය වර්තමානය වන විට සංවර්ධන ගැටළුවක් වශයෙන් සියලුම ආර්ථිකයන් පොදුවේ මුහුණදෙන ගැටළුවක් බවට පත් වී තිබේ. දරිද්‍රතාව යන සංකල්පය ගෝලීය වශයෙන් හඳුනා ගැනීමේ දී මුල් කාලයේ දී දරිද්‍රතාව යන්න මූලික අවශ්‍යතා සපුරා ගැනීම සඳහා වන සම්පත් හිඟතාවය ලෙස හඳුනාගනු ලැබුණු අතර වර්තමානය වන විට එය විස්තීර්ණ සංකල්පයක් බවට පත්ව තිබේ. දරිද්‍රතාවය තුරන්කිරීම පිළිබඳව වන කතිකාව ශ්‍රී ලංකාව තුළ මූලිකව සාකච්ඡාවට බඳුන් වීම ඇරඹෙන්නේ 1940 දශකයේ සිට ය (*ආර්ථික විමසුම*, මහජන බැංකුව). ශ්‍රී ලංකාවේ දරිද්‍රතාව තුරන්කිරීම හා අසමානතාවය අවම කිරීම සඳහා වන අවශ්‍යතාවය ඒ අනුව 1940 දශකයේ සිට මෙරට ඉස්මතු විය. ඒ අනුව මෙරට දරිද්‍රතාවය තුරන්කිරීම සඳහා වන විවිධ වැඩසටහන් ක්‍රියාවට නන්වන ලදී. ඒ අනුව ක්‍රියාත්මකවන ලද ආහාර සහනාධාර වැඩසටහන (1940), ආහාර මුද්දර ක්‍රමය (1979), ජනසවිය (1988), සමෘද්ධි සහනාධාර වැඩසටහන (1994) ආදි වැඩසටහන් ප්‍රධාන වේ. වසර 2018 වන විට දරිද්‍රතාවයේ සැළකියයුතු ප්‍රතිශතක අඩුවීමක් පෙන්නුම් කරන අතර ඊට සමගාමීව සම්පත් බෙදීයාමේ විෂමතාවයට සිදුවී තිබෙන බලපෑම අධ්‍යනය මේ ඇසුරෙන් අපේක්ෂා කෙරේ.

දරිද්‍රතාවය[18] යනු ගෝලීය සංවර්ධන ගැටලුවකි. දරිද්‍රතාවය හෙවත් දුප්පත්කම යන්න සරලව හඳුන්වාදිය හැක්කේ අවම වශයෙන් මූලික අවශ්‍යතාවන් වත් සපුරාගත නොහැකි තත්වයක් ලෙසය (මූලික අවශ්‍යතා ප්‍රවේශය, ජාත්‍යන්තර කම්කරු සංවිධානය 1970). එහෙත් දරිද්‍රතාව සඳහා වන නිශ්චිත නිර්වචනයක් නොමැති අතර විවිධ නිර්වචනයන් පවතී. දරිද්‍රතාවය යනු ප්‍රමාණවත් නොවන ආර්ථික සම්පත් හා පරිභෝජනය සමඟ සම්බන්ධ වී ඇති ශාරීරික හා මානසික යහපැවැත්මේ හිඟකමයි (Baratz & Grigsdby 1971). දරිද්‍රතාවය යනු තනි පුද්ගලයෙකු හෝ කුටුම්බයක් විසින් තම මූලික අවශ්‍යතාවයන් හොඳින් සපුරා ගැනීමේ ඉඩප්‍රස්ථා වලින් බැහැරව, තිරසාරත්වය හා යහපැවැත්මෙන් යුතුව ජීවත්වීමේ තත්වය අහිමි කිරීමට හේතුවන්නකි (Barat,2007).

[18]දරිද්‍රතාව යනු යහපැවැත්මෙන් වියුක්ත වීමයි. (ලෝක බැංකුව. 2000).

එක්සත් ජාතීන්ගේ සංවිධානයේ නිර්වචනයට අනුව දරිද්‍රතාව යනු තෝරා ගැනීම් අවස්ථාවන්හි පවතින හිඟ කමයි. මේ අනුව දරිද්‍රතාවය හුදෙක් මූල්‍යමය හිඟකමක් හෝ ආර්ථිකමය හැකියාවන්ගේ අඩුකමක් ලෙස අර්ථ දැක්විය නොහැකිය. එය සමස්ත ආර්ථික, සමාජ, දේශපාලනික හා සංස්කෘතිකමය ඌනතාවයන් ඇසුරින් ඉස්මතුවන තත්වයක් ලෙස පොදුවේ නිර්වචනය කළ හැකිය.

පර්යේෂණ අරමුණ.

1. ශ්‍රී ලංකාව දරිද්‍රතාවය මුළුමනින්ම තුරන්කිරීම සඳහා පියවර ගතයුතුය යන්න කතිකාවට පැමිණ තිබෙන අවදියක (2017 වසර දුප්පත්කම පිටුදැකීමේ වසර ලෙස රජය විසින්නම් කිරීම) අවධානය යොමු විය යුතු අංශයක් වන දරිද්‍රතාව හා අසමානතාව පිළිබඳ අධ්‍යයනය කිරීම.

2. ආර්ථිකයේ අනාගතයේ ප්‍රබල ලෙස සමාජ, ආර්ථික හා දේශපාලන වශයෙන් ඇතිවිය හැකි සම්පත් බෙදීයාමේ විෂමතාවය ආශ්‍රිත ගැටළු හඳුනා ගැනීම.

3. සංඛ්‍යාත්මක දරිද්‍රතා අනුපාතය අඩුවීමට වඩා ඊට සාපේක්ෂ ආර්ථිකමය ගැටළු පවතින බව සමාජයට ඉස්මතු කිරීම.

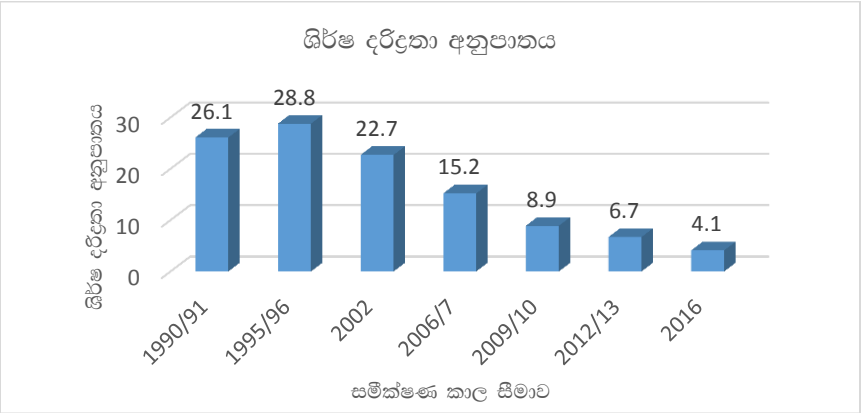
ක්‍රමවේදය

ශ්‍රී ලංකාව ඇසුරේ දරිද්‍රතාවය අධ්‍යයනය කිරීමේ දී මූලිකවම අධ්‍යයනය කෙරෙන්නේ ජන ලේඛන හා සංඛ්‍යා ලේඛන දෙපාර්තමේන්තුව විසින් කුටුම්බ ආදායම් හා වියදම් සමීක්ෂණයට අදාලව නිකුත් කරන ලද දත්ත හා වාර්තා ඇසුරෙණි. පසුගිය දශක කිහිපයක තොරතුරු මෙම අධ්‍යයනයේ දී මූලිකව මා භාවිත කරමින් සංසන්දනාත්මක විශ්ලේෂණයක් සැපයේ. ඊට අමතරව දරිද්‍රතාවය හා අසමානතාවය පිළිබඳව විවිධ ආයතන හා පර්යේෂකයන් සිදුකරනු ලැබූ පර්යේෂණ, ප්‍රකාශන හා දත්ත අධ්‍යයනය ඇසුරෙන් අවශ්‍ය දත්ත හා තොරතුරු මූලාශ්‍ර සම්පාදනය වේ.

අධ්‍යයන ප්‍රතිඵල

ශ්‍රී ලංකා ජන හා සංඛ්‍යා ලේඛන වාර්තා ඇසුරෙන් ආර්ථිකයේ දක්නට ලැබෙන දරිද්‍රතා උපනතීන් අධ්‍යයනය කිරීමේ දී වසර 1990/91 වසරවල පැවති 26.1% දරිද්‍රතා අනුපාතය 1995/96 වසරවල 28.5% දක්වා ඉහල ගොස් 2012/13 වන විට 6.7% දක්වා අඩු වීමක් පෙන්නුම් කරයි. එම තත්වය වසර 2016 වන විට 4.1% දක්වා අඩුවීමක් වාර්තා වේ. ඒ අනුව සමස්ත ජනගහනයෙන් ඉහළ දරිද්‍රතාවයෙන් පෙලෙන ප්‍රතිශතය සැලකිය යුතු ලෙස පසුගිය දශක දෙකෙහි අඩුවී තිබේ. ජන හා සංඛ්‍යා ලේඛන වාර්තා අනුව අධ්‍යයනය කිරීමේ දී මෙරට දරිද්‍රතා අනුපාතය අවම වුවත් සැලකියයුතු ලෙස සම්පත් බෙදීයාමේ සමානත්වයක් හඳුනාගත නොහැකි වේ. පසුගිය දශක කිහිපය තුළ දරිද්‍රතා අනුපාතයේ අගය අඩු වීම පහත වගුව ඇසුරෙන් හඳුනාගත හැකි වේ.

රූප සටහන. 01 ශ්‍රී ලංකාවේ ශීර්ෂ දරිද්‍රතා උපනති



මූලාශ්‍රය : ජන ලේඛන හා සංඛ්‍යාලේඛන දෙපාර්තමේන්තුව. කුටුම්භ ආදායම් වියදම් සමීක්ෂණය 2016

ආර්ථිකයක සම්පත් බෙදියාමේ අසමානතාවය අධ්‍යයනය කිරීම සඳහා භාවිත කරන්නේ ගිනි සංගුණකය යි. එය නිර්මාණය කරන්නේ ලෝරන්ස් වක්‍රය ඇසුරෙනි. ලෝරන්ස් වක්‍රයෙන් කෙරෙන්නේ රටක කුටුම්භ ආදායම් ව්‍යාප්තියේ තරම ගණනය යි. ඒ අනුව ඉතා දුප්පත් හා ධනවත් පවුල් අතර ආදායම් බෙදීයාමේ තරම ගණනය කිරීමෙන් මෙහි අගයන් වාර්තා කෙරේ.

වසර 1985 සිට 2016 තෙක් ජන හා සංඛ්‍යා ලේඛන දත්ත අධ්‍යයනය කරන විට මෙරට සම්පත් බෙදීයාමේ විෂමතාවයේ තරම පැහැදිලිව පෙනීයයි. වසර 1985/86 වන විට 0.46ක පැවතී අගය 1990/91 වන විට සැලකියයුතු ප්‍රතිශතකමය අඩුවක් පෙන්නුම් කරයි. එනම් එම අගය 0.43 දක්වා අඩු වී තිබේ. එහෙත් එම සම්පත් බෙදීයාමේ විෂමතාව ඉන් පසු වසර කිහිපය තුළ ක්‍රමික ඉහල යාමක් වාර්තා වේ. එම අගය ඉහලම අගයන් වාර්තා වන්නේ 2006 වසරේ සිට 2010 වසර දක්වා කාළය තුළය. වසර 2016 වන විට මෙරට අසමානතාවය එනම් සම්පත් බෙදී යාමේ විෂමතාවය ගිනි අගය 0.45 දක්වා අඩු වීමක් පෙන්නුම් කරයි. එහෙත් එම තත්වය තුළ වුවත් මෙරට ජාතික ආදයම අඩු ආදායම් ලබන කණ්ඩායම් වෙත බෙදී යාමේ දැඩි විෂමතාවයක් පෙන්නුම් කරයි. විශේෂයෙන්ම අසූව දශකයෙන් පසු මෙරට දරිද්‍රතාව පිටු දැකීම සඳහා විවිධ සමාජ සංවර්ධන වැඩසටහන් ක්‍රියාත්මක විය. ජනසවිය (1988), සමෘද්ධි සහනාධාර වැඩසටහන (1994), දිවිනැගුම (2013) වැනි සමාජ සහනාධාර ව්‍යාපෘති ඇරඹීමත් සමග දරිද්‍රතාව අවම කිරීමට විවිධ පියවර ගැනිණි. එතැන් සිට අද දක්වා එම වැඩසටහන් විවිධාකාරී අයුරින් ක්‍රියාත්මක වේ. වසර ගනණක් පැවති යුධ තත්වය නිමාව තිබෙන යුගයක පවා එසේ ඉහල ආදායම් ව්‍යාප්ති විෂමතාවයක් පවතින්නේ නම් ඒ පිළිබඳව වැඩි අවධානයක් යොමු කිරීම අත්‍යාවශ්‍යය වේ.

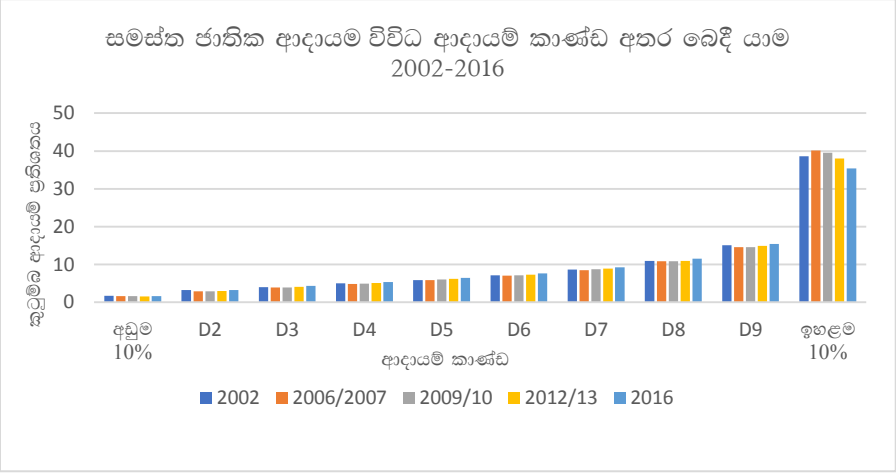
වගුව-01 ශ්‍රී ලංකාවේ සළකා බලන වසර කිහිපයක දී ගිනි සංගුණකය වෙනස්වීම.

වසර	1985	1990	1995	2002	2005	2006	2009	2012	2016
Gini	0.46	0.43	0.46	0.47	0.47	0.49	0.49	0.48	0.45

මූලාශ්‍රය - ජන ලේඛන හා සංඛ්‍යා ලේඛන දෙපාර්තමේන්තුව, 2016

පසුගිය දශක කිහිපය තුළ රටේ අඩුම ආදායම් ලබන 10%ක ජනගහන ප්‍රතිශතය හා ඉහලම ආදායම් ලබන 10%ක ධනවත් ප්‍රතිශතය අතර ආදායම් වෙනස වසර 1990 සිට 2012/13 දක්වා බලන විට දැඩි ආදායම් ව්‍යාප්ති විෂමතාවයක් දක්නට ලැබේ. 2012/13 කුටුම්භ ආදායම් වියදම් සමීක්ෂණයට අනුව අවම ආදායම් ලබන 10% අතර සමස්ත ජාතික ආදායමේ ප්‍රතිශතය 2%ට අඩු වන අතර ඉහලම ආදායම් ලබන 10%ක ධනවත් ප්‍රතිශතය අතර ආදායමෙන් බෙදීයන ප්‍රතිශතය 38% ඉක්මවයි. මෙම තත්වය 2016 වසර අනුව සසඳන විට ඉහලම ආදායම් ලබන 10% ප්‍රතිශතය අතර බෙදෙන සමස්ත ආදායම 38% සිට 35.4% දක්වා අඩු ව තිබේ. එහෙත් අඩුම ආදායම් ලබන ලබන 10% ප්‍රතිශතය අතර බෙදී යන ජාතික ආදායම 1.5% සිට 1.6% දකවා ඉහල ගොස් තිබේ. රූප සටහන 02 මඟින් 2016 වසරේ ශ්‍රී ලංකාවේ කුටුම්භ ආදායම් බෙදීයාම පෙන්නුම් කරයි.

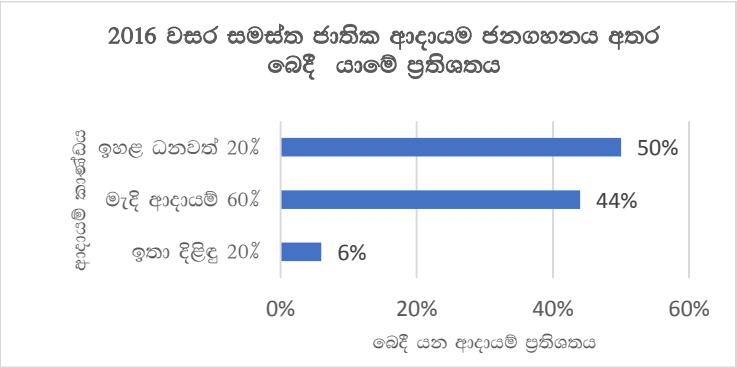
රූප සටහන 02 - ශ්‍රී ලංකාවේ ජාතික ආදායම කුටුම්භ අතර බෙදීයාම



මූලාශ්‍රය - ජන ලේඛන හා සංඛ්‍යා ලේඛන දෙපාර්තමේන්තුව, කුටුම්භ ආදායම් වියදම් සමීක්ෂණ දත්ත 2002 - 2016

රූප සටහන 03 අනුව වසර 2016 කුටුම්භ ආදායම් වියදම් සමීක්ෂණයට අනුව මෙරට අඩුම ආදායම් ලබන 20% සඳහා සමස්ත ජාතික ආදායමෙන් බෙදීයන්නේ 6%ක් තරම් වූ සුළු කොටසකි. එහෙත් ඉහල ආදායම් ලබන 20% මෙරට ජාතික ආදායමෙන් හරි අඩක් එනම් 50%ක් පරිභෝජනය කරයි. ඒ අනුව ආර්ථිකයේ දැඩි සම්පත් බෙදීයාමේ විෂමතාවයක් පෙන්නුම් කරයි.

රූප සටහන 03 - 2016 වසරේ කුටුම්භ ආදයම බෙදීයාම



මූලාශ්‍රය - ජන ලේඛන හා සංඛ්‍යා ලේඛන දෙපාර්තමේන්තුව, 2016 කුටුම්භ ආදායම් වියදම් සමීක්ෂණය

සාරාංශය සහ ප්‍රතිපත්තිමය විසඳුම්.

ශ්‍රී ලංකාව අඩු ආදායම් ලාභී ආර්ථිකයක සිට පහල මැදි ආදායම් ආර්ථිකයක් දක්වා වර්ධනය වී තිබේ. ඒක පුද්ගල ආදායම වසර 2018 වනවිට ඩොලර් 4000 ඉක්මවා තිබේ. දරිද්‍රතාවය 4.1 දක්වා අවම වී තිබේ. සේවා වියුක්තිය සැලකියයුතු අඩුවීමක් වාර්තා කර තිබේ. එහෙත් ආදායම් ව්‍යාප්ති විෂමතාවය තවමත් සැලකියයුතු ඉහළ මට්ටමක් වාර්තා වී ඇත.

ආර්ථිකයේ ඉහළ ආදායම් ව්‍යාප්ති විෂමතාවයක් පවතින විට මහජනතාව විවිධාකාරී සමාජ විරෝධී ක්‍රියා මගින් ආදායම් ඉපයීමට යොමු විය හැකිය. එමෙන්ම රැකියාවන්හි වැටුප් ඉල්ලා සේවා නියුක්තිකයන්ගේ අරගල උද්ඝෝෂණ ආදියේ සැලකියයුතු ඉහළයාමක් සමාජයෙන් අපේක්ෂා කළ හැකිවේ. රැකියා විරහිත හා අඩු ආදායම් ලබන ජනතාවගේ ජීවන තත්වය පහළ යාමත් එම ජනතාව සඳහා සුබසාධන සේවා සැපයීමට රජයට දැරියයුතු වියදම ඉහළ යාමත් තවත් අහිතකර ප්‍රතිඵලයකි. එවැනි ප්‍රවණතා ආර්ථිකයක ක්‍රියාකාරිත්වයට දැඩි බාධාවකි. සමස්ත ආර්ථිකයේ සේවා වියුක්තිය ඉහළ යාමත්, ආර්ථික අස්ථාවරත්වය කෙරෙහි මෙම අසමානතාවය බලපෑමත් හේතුවෙන් තිරසාර සංවර්ධනයක් කෙරෙහි ආර්ථිකයකට ගමන් කිරීම දැඩි ලෙස බාධාකාරී වනු ඇත.

මෙම සම්පත් බෙදීයාමේ අසමානතාව අවම කිරීමට නම් ඉල්ලක්කගත හා සැලසුම්ගත නිවැරදි හා ඉල්ලක්කගත ආර්ථික ප්‍රතිපත්තියක් ඒ සඳහා අත්‍යවශ්‍ය වේ. ලංකාවේ දැනට ක්‍රියාත්මක වන බදු ප්‍රතිපත්තියේ සැලකියයුතු වෙනසක් වීම අනිවාර්ය වේ. ඒ අනුව වක්‍ර බදු ප්‍රතිශතය සැළකිය යුතු මට්ටමින් අවම කර ඍජු බදු ප්‍රතිශතයඉහළ දැමීම අවශ්‍යම කරුණකි. ආර්ථිකයේ සමස්ත නිෂ්පාදන ධාරිතාවයෙන් සැලකිය යුතු ප්‍රතිශතයක් බස්නාහිර පලාතට ස්ථානගත වී තිබෙන අතර නිෂ්පාදන ධාරිතාව හා හැකියාව ආර්ථිකයේ ග්‍රාමීය අංශ දක්වා ව්‍යාප්ත කිරීම තුලින් සේවා නියුක්තිය හා කුටුම්බ ආදායම් ඉහල නැංවීමේ හැකියාවක්

පවතී. ග්‍රාමීය මට්ටමේ කර්මාන්ත හා යටිතල පහසුකම් සංවර්ධනය කිරීමෙන් රැකියා අවස්ථා උත්පාදනය සඳහා වන විධිමත් ක්‍රමවේදයක් තුළින් පවතින ආදායම් ව්‍යාප්ති විෂමතාවය අවම කරගත හැකිය. දරිද්‍රතාවයේ සංඛ්‍යාත්මක අඩුවීම පමණක් නොව ගුණාත්මක අඩුවීමක් සහ සම්පත් සමානව බෙදා හැරීමේ ක්‍රමවේදයකට ප්‍රවේශ වීම අනිවාර්ය වේ.

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Self Help Groups (SHGs) and Financial Inclusion Dimensions: An Analytical Study of Indian States

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Keywords: *Financial Inclusion; Inclusion Index; Inclusive Growth; India*

Introduction

Financial inclusion is emerging as a new model of economic growth that plays a major role in eliminating poverty from the country. Financial inclusion is a priority for the country in terms of economic growth and it enables a reduction of the gap between the rich and the poor. In the current scenario financial institutions are the robust pillars of progress, economic growth and development of the economy.

Financial inclusion is defined as the process of ensuring access of financial services timely and adequately, and credits where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost (C. Rangarajan Committee, 2008). The different financial services include access to savings, loans, insurance, payments and remittance facilities offered by the formal financial system. This aspect of financial inclusion is of vital importance in providing economic security to individuals and families (Kelkar, 2014). From this, we can know that inclusive financial sector development makes two complementary contributions to poverty alleviation – (i) it drives economic growth faster which indirectly reduces poverty and inequality, and (ii) by creating appropriate, affordable, financial services for poor people, it can improve their welfare and living standards.

In India, many people are not considered for fair treatment either by the social institutions or by the financial institutions. The concept of financial inclusion can be traced back to the year 1904 when the co-operative movement took root in India. It gained momentum in 1969 when 14 major

commercial banks of the country were nationalized and the lead bank scheme was introduced shortly thereafter. Financial sector inclusion is a very important component of inclusive growth because poverty, deprivation and other socio-economic problems can arise due to financial exclusion. The existing literature on measuring financial inclusion has not been too comprehensive and the present research makes an effort towards the construction of a new financial inclusion index of Indian states for a more inclusive policy on Financial Inclusion.

Objectives

In the light of these above motivations and background, the specific objectives of the present study are: (i) to explore the current status of microfinance in India (ii) to understand the present status of India's financial inclusion by applying the financial inclusion index (FII).

Methodology

With the rising interest in financial inclusion among policymakers, a multiplicity of financial inclusion indicators has been developed. This study is also constructing a Financial Inclusion Index (FII). To construct an index, this study first calculates a dimension index for every dimension of financial inclusion. Steps are explained below.

Formula 1:

$$d_i = w_i * \frac{A_i - m_i}{M_i - m_i}$$

Where, w_i = weight attached to the dimension i, $0 \leq w_i \leq 1$

A_i = Actual value of dimension i, m_i = Minimum value of dimension i, M_i = Maximum value of dimension i, and d_i = Dimensions of financial inclusion i. Formula (1) confirms that $0 \leq w_i \leq 1$ and here, n dimensions of financial inclusion are represented by a point X = (1, 2, 3…). The point 0 = (0, 0, 0…0) represents the point indicating the worst situation and point W = (1, 2, 3 …) represents an ideal situation. Here, both the worst point 0 and the ideal point W are the important factors to calculate an index for countries and states which indicate the position of financial inclusion. If the distance is

larger between X and 0, then it represents higher financial inclusion and similarly if the distance is lower between X and 0, then it represents lower financial inclusion.

Formula 2:

$$X_1 = \frac{\sqrt{d_1^2 + d_2^2 + d_3^2 + \ \dots\dots\dots + d_n^2}}{\sqrt{w_1^2 + w_2^2 + w_3^2 + \ \dots\dots\dots + w_n^2}}$$

Formula 3:

$$X_2 = 1 - \frac{\sqrt{(w_1 - d_1)^2 + (w_2 - d_2)^2 + (w_3 - d_3)^2 + \ \dots\dots\dots + (w_n - d_n)^2}}{\sqrt{w_1^2 + w_2^2 + w_3^2 + \ \dots\dots\dots + w_n^2}}$$

Formula 4:

$$FII = \frac{1}{2}\,(X_1 + X_2)$$

In the formula (2) for financial inclusion index (FII), X_1 indicates average of the Euclidian distance between X and 0. Higher value of X_1 implies more financial inclusion. In Formula (3), for FII, X_2 indicates inverse Euclidian distance between X and W and similarly, higher value of X_2 corresponds to be higher financial inclusion. The formula (4) is the simple average of X_1 and X_2. Depending on the value of FII, states are divided into three categories such as:

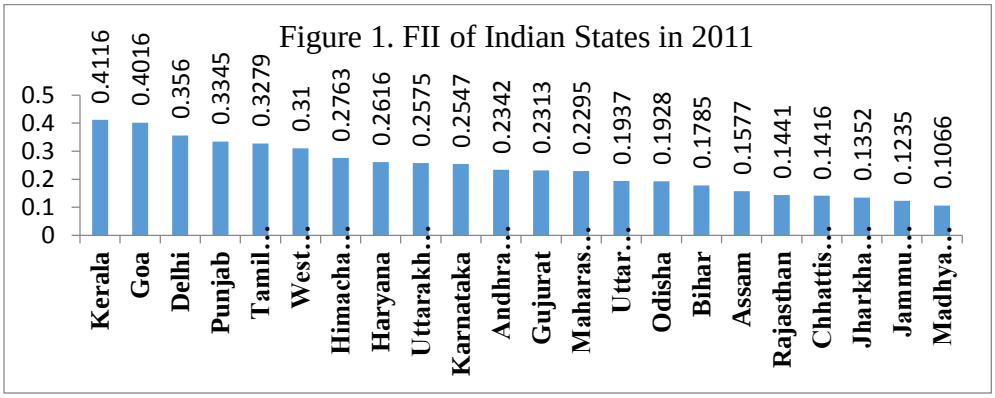
i. $0.5 <$ FII ≤ 1 indicates high financial inclusion
ii. $0.3 <$ FII < 0.5 indicates medium financial inclusion
iii. $0 \leq$ FII < 0.3 indicates low financial inclusion

This study is primarily based on secondary data on banking penetration, availability of the banking services and usage of the banking system. Here, various variables such as Bank branches, ATMs, Deposits and Credits are taken from RBI. All dimension data are taken from Census of India (2011), RBI, and IMF. The Index of financial inclusion presented in formula 4 considers three basic dimensions of an inclusive financial system such as: banking penetration, availability of the banking services and usage of the banking system. These dimensions are largely motivated by availability of

relevant and consistent data for Indian states to compute comparable FII. Here, year 2011 is taken as the base for data representing indicators of financial inclusion for the computation of Financial Inclusion for 22 major Indian States. For absolute measure of Financial Inclusion of India, the study period spans from 2006 to 2014.

Results and Discussion

The FII is a composite index of all three dimensions (Banking penetration, Availability of the banking services and Usage of the banking system) and emphasizes uniform development of the states across these three dimensions. It suggests a direction for policymakers to improve the performance. The purpose of this analysis is to find out the dimensions across which a particular state is doing well or is underperforming.



Source**:** Author's Calculation

Table 1 and Fig.1 show the state-wise FII in 2011. From the data given in the table, it is quite evident that Kerala (0.4116) has secured first rank in FII followed by Goa (0.4016), Delhi (0.356), Punjab (0.33), Tamil Nadu (0.3279) and West Bengal (0.31). These states are categorized under the medium financial inclusion ($0.3 < FII < 0.5$). There is no state under the high financial inclusion. Madhya Pradesh (0.1066) has secured the last rank in FII among all other states in India. A state with low financial inclusion requires an increase in banking penetration, more availability of banking services and above all usages of the banking system. Even medium financial inclusion performing states essentially means that there is lot to be done to improve the position.

Table 1. Financial Inclusion Index (FII) of Indian States

State	FII	FII Rank	% of HH using BF* (2011)	Category
Kerala	0.41	1	74.2	*Medium Financial Inclusion* ($0.3 < FII < 0.5$)
Goa	0.40	2	86.8	
Delhi	0.35	3	77.7	
Punjab	0.33	4	65.2	
Tamil Nadu	0.32	5	52.5	
West Bengal	0.31	6	48.8	
Himachal Pradesh	0.27	7	89.1	*Low Financial Inclusion* ($0 \leq FII < 0.3$)
Haryana	0.26	8	68.1	
Uttarakhand	0.25	9	80.7	
Karnataka	0.25	10	61.1	
Andhra Pradesh	0.23	11	53.1	
Gujarat	0.23	12	57.9	
Maharashtra	0.22	13	68.9	
Uttar Pradesh	0.19	14	72.0	
Odisha	0.19	15	45.0	
Bihar	0.17	16	44.4	
Assam	0.15	17	44.1	
Rajasthan	0.14	18	68.0	
Chhattisgarh	0.14	19	48.8	
Jharkhand	0.13	20	54.0	
Jammu & Kashmir	0.12	21	70.0	
Madhya Pradesh	0.10	22	46.6	

Notes: % of households (HH) using banking facilities (BF)

From Table 1, percentage of household using banking services is the highest in Himachal Pradesh (89.1) followed by Goa (86.8), Uttarakhand (80.7), Delhi (77.7) and Kerala (74.2). The percentage of households using banking services is very low in Assam (44.1) in comparison to other states. Moreover, there is need of a comprehensive financial inclusion plan for India as a whole along with region specific inclusion plans. Till now financial

inclusion has not yielded the desired results but no doubt it is playing a significant role and is working on the positive side.

Conclusion

The paper examined the financial inclusion by applying the Financial Inclusion Index (FII) for Indian states. The FII was computed for 22 states of India, using data for indicators of three dimensions such as banking penetration, availability of banking services and usage of the banking system. On the basis of the range of index, states were grouped into three categories, namely, high financial inclusion, medium financial inclusion and low financial inclusion. Kerala ranked at the top of FII followed by Goa, Delhi, Punjab, Tamil Nadu etc. and Madhya Pradesh came at the bottom. Out of 22 states, there was no state under the high financial inclusion category. Kerala, Goa, Delhi, Punjab, Tamil Nadu and West Bengal come under the medium financial inclusion category and all other states are under the low financial inclusion category, indicating the need for further development on financial inclusion measures. More opening of no-frill bank accounts is not the purpose or the end of financial inclusion while formal financial institutions must gain the trust and goodwill of the poor (Sharma and Kukerja, 2013).

The SHGs-Bank linkage programme has been promoting microfinance facilities to ensure financial inclusion. It facilitates extending financial services to unbanked disadvantaged section of society. It is also found in the analysis that the number of SHGs positively endorses financial inclusion. The policies of financial inclusion may not be yielding the expected results but the measures adopted by the governments must be speeded up in every state, particularly to those regions where FII is low.

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The Shifting of the Epicenter of Capitalist Crisis from Labor to Finance: *On David Harvey's The Brief History of Neoliberalism and the Enigma of Capital*

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Keywords: *Capitalism, Crisis, Neoliberalism, Capital, Marxism*

Introduction

In the case of money, it becomes madness; madness, however, as a moment of economics and as a determinant of the practical life of peoples. – Karl Marx

Were Marx to write Capital today, or if the writing of capital were to pick up now where he left off then, the critique of political economy would necessarily morph into the domain of finance. – Randy Martin

This paper attempts to critically analyze the rise of finance in the 1970s under the global neoliberal regime and its systemic confrontation with the global financial crisis in 2007-08 through the analytical work of David Harvey, mainly *The Brief History of Neoliberalism* (2005) and *The Enigma of Capital and the Crisis of Capitalism* (2010). Harvey's comprehensive application of dialectical historical materialism on the one hand and the fresh look he brings into the Marxian analysis of capitalism in *'the age of finance'* on the other inspired me to focus on his work and appreciate them with a critical sense.

The content of the paper consists of the following sections and Harvey's own articulation upon them. Especially, Harvey's fresh gaze upon the Marxian notion of *'capital is not a thing but a flow'* and his application of the concept in order to understand the capitalist crises in 1970s and 2007 is central to the argument constructed in this paper. Then, how well Harvey argues against

the notion of mainstream economics on the philosophical platform of *'systemic risks verses internal contradiction of capital'* is discussed. Attached to that, the main focus of this paper is presented, *'shifting the epicenter of the systemic crisis of capitalism from labor to finance'.* Next, the background of Harvey's argument of *'capital as a self-destructive and a destructive force'* is discussed as amalgamating with the concept *'capital's surplus absorption problem',* which as Harvey considers is one of the most magnified features in the last two crises and is becoming more and more challenging for the global capitalist elites.

Objective

The objective of this paper is to analyze how the configuration of the crisis of capitalism in the 1970s and the solutions that emerged from that crisis actually dictate the terms of the 2007-08 financial crisis. In other words how effectively capitalism was able to shift its intrinsic crisis nature from *'the problem of labor'* to *'the problem of finance'.*

Methodology

The paper took into account only secondary sources and is developed in the form of a theoretical work of research. Both qualitative and quantitative data instruments are used. The main literature of the paper consists of David Harvey's The Condition of Postmodernity (1989), The Brief History of Neoliberalism (2005), The Enigma of Capital and the Crisis of Capitalism (2010), Marx, Capital and the Madness of Economic Reason (2017).

Results and Discussion

Capital is not a thing but a flow: Securing the motion of capital from 1970s to 2007: Harvey pointed out the inadequacy of the conventional version of the Marxian theory of crisis formation laid out in *Capital,* in order to understand the "nature and epicenters" of contemporary crises. Therefore, he insists on looking at the wider crisis-framework Marx laid out as a rough piece of work in *The Grundrisse,* according to Harvey, where Marx argues that the circulation and accumulation of capital cannot abide limits. If we try to understand capital as a thing, something solid and containing dead-labor,

Harvey‟s position is, it would not be an accurate understanding and should not be a solid foundation in order to analyze capitalism and further, it will ultimately form an anti-dialectical version of Marxian analysis. According to Harvey, this focuses our attention upon those points in the circulation of capital where potential limits, blockages and barriers might arise, since these can produce crises of one sort or another (Harvey, 2010). In that sense, we can understand that how well but destructively capitalism in 1970s converted its blockages and submerged emerged social relations of that age by fluidizing social relationships, or in Harvey‟s terms, by *financing everything* (Harvey, 2005). In The Enigma, Harvey further elaborates the validity of this claim by highlighting how capital, in its strategy, *financing everything*, successfully combined different spheres of the society, traditionally viewed as unrelated, separated and "non-financial". "Capital cannot circulate or accumulate without touching upon each and all of these activity spheres in some way" (p.124). "Each sphere", Harvey argues, "evolves on its own account but always in dynamic interaction with the others" (p.123). These spheres are: technologies and organizational forms; social relations; institutional and administrative arrangements; production and labor processes; relations to nature; the reproduction of daily life and of the species; and "mental conceptions of the world" (p.123) (Harvey, 2010). In Harvey's account in both recent crises of capitalism two main things occur. Firstly, the flow or the motion of capital is stopped due to its self-contradictory nature and secondly, capitalism successfully constitutes solutions in order to re-channel and secure the fluidity of capital at a global scale at a massive human and interestingly, at a massive financial cost.

Systemic Risk verses Internal Contradictions of Capital: Harvey basically raises the question, from where these so called *'systemic risks'* that are falsely explained by the neoclassical economics actually come from. Obviously, the answer Harvey articulated is that they are embedded within the very nature of capital itself. In that sense, the financial crisis took place not due to the mismanagement of systemic risks but due to the very embodiment of capitalism. Further, if there was mismanagement appearing globally, it was not due to an unintended policy choice but due to an intended one, which consisted of the deregulation of finance, absolutely in order to encourage the motion of so called *'financing everything'*. Monetarism, according to Harvey, was a sufficient factor but not the necessary factor in order to assemble the global force of neoliberalism and

restore class power against poor and working class all around the world. The Enigma of Capital vigorously attacked two things, capitalism and the understanding of capitalism in mainstream neoclassical economics.[19] Harvey pointed out that while there are many possible realistic ways to explain the crisis which began in 2007, mainstream economists, specially sheltered in the London School of Economics, attempted mystify the real causes of the crisis by saying it occurred due to "systemic risks". Harvey denies the legitimacy of the claim and the existence of "systemic risks" that are yet to be known and hard to avoid according to mainstream economics and proposed the Marxian conception *'contradictions of capital'*.

The shift of the epicenter of crisis from labor to finance: Harvey points out that during the crisis of 2007 nobody accused labor or unions for being greedy and causing the ongoing crisis. *Nobody even mentioned the relevance of labor in order to understand the present crisis*, Harvey mentioned in one of his lectures in 2008. At the epicenter of the problem was the mountain of *'toxic'* mortgage-backed securities held by banks or marketed to unsuspecting investors all around the world (Harvey, 2010). But the role of labor is important in order to understand the present crisis because it is dominated by capital (or financial capital systematically) and submerged under the *'necessary fluidity'* for capital to cherish. The central thesis of The Brief History and The Enigma is that the solutions of the crisis of the 1970s fundamentally constituted the necessary causes of the global financial crisis. In other words, financialization, which became the slogan of profitability and the globally extended deregulation mechanism which was hailed as *'allowing the market to emancipate the humankind'*, systematically shifted the cause of capitalist crisis from labor to finance.

Capital as a self-destructive force and a destructive force: In both The Brief History and The Enigma Harvey identifies capital not only as a self-destructive force but also as a destructive force. In other words it restructures itself not only at its cost but also at the cost of others, human beings and nature. As previously mentioned, in order to contain the compounding

[19] According to Shaikh, the historical contribution of mainstream economics is legitimizing capitalism against its odds and destructions through a process of "ideological cleansing".

growth rate and reinvest in profitable means capital has to destroy a certain proportion of its *'expired wealth'* and destroy the old and slow spatiotemporal dimensions to alter them with newer and faster ones. This process of destruction is involved with science and technology, engineering, art and craft, law and the military, etc. Self-destruction of capital takes place, according to Joseph Schumpeter, through the practices of "invention and innovation" under capitalism. Nevertheless, according to Harvey, this process was never a peaceful one. It was a violent and forceful process that was fundamentally driven by the class interests of the bourgeoisie.

In The Brief History of Neoliberalism Harvey provides a comprehensive account in order to depict the "necessary violence" that had to be unleashed in order to "unite the world" under the neoliberal order. His account consisted of the violent history of Chile during the military dictatorship under Augusto Pinochet, Thatcher"s brutal attack on the miners and pioneering the long stretch of privatization in UK and Regan's attack on aviation unions in the USA. This violence is not necessarily depicted by the number of political killings or imprisonments but in terms of the social control it systematically planted through the channels of economic means and respective power position in the process of production. The figure demonstrates the attack on labor by global elites in 1970s. The growing gap between productivity and real wages became "an economic norm" and never even identified as a fundamental issue embedded within the logic of capitalism. According to Harvey, this process was absolutely intended and legitimized by the top 1% of the US population, "a non-violent strategy" to keep labor under pressure.

The Surplus absorption problem of Capital: From stagflation to global financial crisis: The surplus absorption problem of capitalism was highly magnified and further aggravated during the financial crisis. Harvey pointed out that any capitalist economy must expand at a rate of about 3% per annum, which means more and more surplus must be absorbed by the system and there should be a mechanism to provide room for this ever-growing mechanism in-built within the capitalist growth logic. Harvey calls this necessary rate of surplus absorption "the compound growth rate". If we are to return to 3 per cent compound growth today, $1.6 trillion in surplus capital would need to be profitably invested. If sustained growth returns, the

world economy will need to absorb some $3 trillion in surplus capital by 2030 (Harvey, 2010, 26-27). The key point that should be highlighted here is that even though capitalism has generated more means to invest, to reproduce, to consume and to exploit; keeping up with this ever-expanding and socially limiting compounding growth rate is becoming problematic to capitalism. The stoppage of this compounding growth rate in 1930s was treated with Keynesian demand stimulations, then in the 1970s with destructive neoliberal policies and then in 2008 with a massive state bail-out and financial stimulation packages. The main question Harvey raises is that, where does the system go? And what would be the solution for the next compounding growth rate stoppage (the next crisis), within a space where the possible solutions are getting limited and socially questioned? According to Harvey, the financial system is subjected to too many experiments and society as a whole is too exhausted. The crisis erupted in 2007 brought a wider picture about these human realities on one hand and on the other it brought the underlying capital surplus absorption problem to the surface, which became a global phenomenon under neoliberal globalization.

Conclusion

David Harvey's analysis that developed through, specifically, *The Brief History of Neoliberalism* and *The Enigma of Capital and the End of Capitalism* is vital in order to understand the systemic crisis of capitalism and different epochal epicenters of the same crisis. Harvey's main argument that can be desterilized through the above literature is that the necessary elemental motions (reasons or causes) of the global financial crisis of 2007 were embedded in the solutions constituted; not only to get away from the crisis of 1970 but also to make neoliberalism the hegemonic order. In other word, the repercussions of the elitists' political project in the 70s, vicious attack on labor and subordinating the social position and class power of labor as positioning finance as the center of the economic reality, counterattacked as a *'dialectical historical material reality'* in the next capitalist crisis. In Marxian terms, this entire process can be identified as a process of attacking, undermining and delaying the embedded internal contradictions of capitalism. As *Anwar Shaikh* demonstrated in his work with close attention, this is the fundamental nature of the existing economic order that *'disorder becomes the order'*. For Harvey this disorder continuously creates and

corrects the appropriate time and space sequences of capital, as he asserts, which is the "*lifeblood that flows through the body politics".*

These epicenters of two crises, as Harvey stresses, subjected to shifting, in a highly politically and theoretically sophisticated manner, can be simply illustrated by shifting the epicenter of the crisis of the 1970s from Labor to finance in 2007-08. Harvey convincingly ascertained that capital never solves its crisis tendencies but it merely shuffles them around. Further, through the aspect of self-destructive nature of capital, Harvey demonstrated how destructive and irrational capital can be to humans and nature while *'correcting'* the irrationalities of capitalism. This shift of the epicenter of crises proves that this irrational logic can typically lead the world to new configurations, solutions, advanced development and financial models, spheres of surplus to be accumulated and new forms of class power. Nevertheless, those will merely do nothing except deepening and further politicizing the existing crisis of global capitalism.

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Work-related Migration Intentions of Youth in Nepal: An Empirical Analysis

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Introduction

A high youth unemployment rate as well as a high labor migration rate in Nepal has caused much debate in recent times both in policy circles and academia. Migration is in an increasing trend and unemployment trend is largely the same. Annual Household Survey of 2013 showed that the unemployment rate was 3.3 percent whereas time-related unemployment was 13.4 percent and labor underutilization rate was about 27.8 percent. This depicts the problem of unemployment and underemployment in Nepal's labor market (CBS, 2015). If we look for the corresponding figures for youth (age15-29), the unemployment rate is 19.2 percent and if we consider the relaxed definition of unemployment, this figure reaches 28.9 percent (Serrière, 2014). The youth unemployment rate is even higher among the highly educated.

The labor market in Nepal is characterized by a large informal sector within a low productivity agriculture based economy. The problem of underemployment, inadequate earnings and skill mismatch are features of the employed in Nepal. Afram and Del Pero (2012) point to rigid labor market regulations and unionization as obstacles to job creation and the hiring of workers through formal contracts. Lower productivity in the agriculture sector and lower wage rates are pushing youth to seek alternative employment options. Labor migration has emerged in a great way as the means of securing employment. Those youth who are employed are also mostly employed in informal sectors with little or no social protection (Serrière, 2014). Like in other developing countries, the youth in Nepal take

a long time to get "decent jobs" and the issue of youth (un)employment has been incorporated in the National Youth Policy 2010. The lack of "desirable" employment (in terms of employment opportunities and well-remunerated jobs), (real or perceived) low returns to education, desire for family's economic well-being, etc. are often cited as the main reasons for migration (Sijapati et al. 2017). Though Nepal is predominately an agricultural economy, reluctance to work in the (subsistence) agriculture sector and considering it as "dirty job" is another reason which has both promoted unemployment and migration among youths in Nepal (Gartaula et al. 2012). Since agriculture in Nepal is a subsistence livelihood it may not fulfill the aspirations of the young. While there is high unemployment among youth in Nepal, enterprises looking for employees find difficulties in finding applicants with the right skills and competencies (Serrière, 2014). In this way, the problem of (un)employment and youth migration in Nepal are interlinked.

Objectives

In this paper, we examine determinants of work-related migration intentions among the youth in Nepal. This paper examines their willingness to move for work and its relation with labor market indicators for both employed and unemployed youth. Both employment and unemployment are not homogenous categories. Employment rate or unemployment rate alone cannot explain variability in labor market conditions. We explore how specific labor market situations may affect migration aspirations. Using intention data has certain advantages. First, studies have shown that intended migration is a predictor of actual migration though there are exceptions. Second, intention data should be seen as potential migration rather than actual migration and this gives the mirror image of the future prospects of the country.

Methodology

We use data from the School-to-work-transition (SWTS) survey for Nepal conducted by the International Labour Organization (ILO) in 2013, covering 15-29 year-olds. The survey contains information on various aspects of labour market conditions, history of economic activities and perceptions and aspirations of youth. The survey is nationally representative and the sample

size is 3584. We use a sub-sample of 1932 from 3584 including only those youths who are either employed or available for work (relaxed unemployment). Those who are still in education or undergoing training and not seeking to work are not included in the analysis. We apply survey weights to make it nationally representative. We also employ multinomial logistic regression to analyze the various determinants of the work-related youth migration intentions. We analyze a baseline model for the whole sample including both employed and unemployed youths and two separate analyses for the employed and unemployed youths.

Results and Discusstion

The focus was on effects of labor market conditions on migration intentions. Our analysis highlighted the importance of employment status (in terms of (un)employment as well as quality of (un)employment) in migration intentions. The result shows that gender plays a significant role in explaining migration intentions. Females have a lower intention for migration as compared to males. This result mirrors the real migration trends where most of the migrants are male. Income level of household is significant for internal migration only. Those who are poor are more likely to migrate internally. Those having an education at or below primary level have a higher intention of international migration as compared to those having secondary level education. Youths in rural area mostly intend to migrate internally whereas youths in urban areas have higher aspirations for international migration.

Compared to employed youth, unemployed youth show higher aspirations for migrating both internally and internationally. Employed youth can be categorized into two groups: those transited and those who are still in transition. Unemployment is also categorized as unemployed and inactive. This shows that youths having temporary or unsatisfactory employment (not transited) are more likely to have higher migration intentions as compared to those having stable employment. This highlights the importance of quality of employment in explaining migration trends in Nepal. This demands further analysis on the indicators quality of employment. We have extended analysis to employed and unemployed youths separately.

Youths employed in informal employment are more likely to have higher migration intentions as compared to those employed in formal employments. Similarly, those working as employees are more likely to have higher migration intentions. This indicates the bleak labor market prospects. Youths who want to change their employment see migration as the feasible option indicating problem in local labor market prospects. Youths in agriculture sectors are more likely to have international migration aspirations compared to those employed in the service sector. Similarly, youths having higher level of skills have a higher intention of international migration indicating "brain-drain". Poor labor market prospects are not able to hold skilled labor in the domestic labor market.

Youths who are not in the labor market and who have a preference for a minimum income level (below which they don't work) have higher aspirations for international migration. Similarly, those who have applied for jobs before but are unemployed till now are more likely to have aspirations for both internal and international migration. This, again, portrays the poor local labor market conditions. Demand side constraints in finding jobs have significant effects on determining internal migration.

Conclusion

Our analysis highlights that there is significant role played by quantity as well as quality of labor market conditions in explaining the present migration trend in Nepal. Though intention/aspirations data do not directly explain the real migration situation, it gives an indication of the potential problems in the domestic labor market. Quality of employment matters in explaining migration aspirations. So, focusing on employment alone without focusing on the quality of employment cannot explain the migration pattern in Nepal. Informal employment in informal sectors is constraining youths to realize their potentials and aspirations. One probable problem is the low income as compared to their potential level. The overall bleak labor market prospects in Nepal are compelling youths to migrate in search of jobs both domestically and internationally. Though our analysis is only of push factors and does not consider pull factors of migration, we can sufficiently conclude that the push factors in terms of poor labor market conditions is causing migration in Nepal.

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